DOCUMENT RESUME

ED 433 707 FL 025 957

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|---|---|
| AUTHOR | Powell, Mava Jo, Ed. |
| TITLE | The Twenty-First LACUS Forum, 1994. |
| INSTITUTION | Linguistic Association of Canada and the United States, Chapel Hill, NC. |
| PUB DATE | 1995-00-00 |
| NOTE | 677p.; Proceedings of the Forum of the Linguistic Association of Canada and the United States (21st, Vancouver, British Columbia, August 1994). |
| AVAILABLE FROM | LACUS Secretary Treasurer, P.O. Box 6850, RM MH103, Fullerton, CA 92846-6850 ($45). |
| PUB TYPE | Books (010) -- Collected Works - Proceedings (021) |
| EDRS PRICE | EDRS Price MF04 Plus Postage. PC Not Available from EDRS. |
| DESCRIPTORS | Alphabets; Bilingualism; Child Language; Computational Linguistics; Contrastive Linguistics; Diachronic Linguistics; Dialects; English; English (Second Language); *Grammar; Idioms; Japanese; Language Acquisition; *Language Patterns; *Language Research; Lexicology; *Linguistic Theory; Morphology (Languages); Phonetics; Phonology; Second Language Learning; Second Languages; Semantics; Sex Differences; Suprasegmentals; Syntax; Translation; Uncommonly Taught Languages; Verbs; Vocabulary Development; Vowels |
| IDENTIFIERS | Breton; French (Acadian); Neologism; Othello |

ABSTRACT

Fifty-three papers on linguistic theory and language research, including a number of prize-winning essays, address these topics: aspects of discourse analysis; bilingualism; Chinese modal verbs; early bilingual speech; linguistic metatheory; music and accent discrepancy; diphthongs; hiatus; vowel patterns; suprasegmentals; neologisms; aspects of morphology and syntax; clause structure; word compounding; idiomatic expressions; semantic and pragmatic meaning; interpersonal communication; aspects of graphemics; computational linguistics and translation; second language learning; topics in dialectology; historical studies; comparative studies; and language evolution. Languages studied include Japanese, English, Chinese, Hottentot, Spanish, Bulgarian, Korean, Taiwanese, French, Breton, Korean, Arabic, Chinantec, Greek, and Portuguese-based creoles. Selected papers include: (1) "On Distinguishing Theme and Topic" (Brend); (2) "Possible Sources of Participant Nominalizers: Implications for Typology" (Spruiell); (3) "Bimodal Communication: What Is It, and Why Study It?" (Messing); (4) "The Use of Japanese Topics in Bilingual Discourse in Japanese and English" (Nishimura); (5) "On the Properties of Chinese Modal Verbs" (Huang); (6) "Another View of Early Bilingual Speech" (Quay); (7) "Guillaume: A Meaning-Based Approach" (Hirtle); (8) "Music and Accent Discrepancy" (Griffen); (9) "Neologisms in Acadian-French Fishing Terminology: An Analogical Syntax Analysis" (Babitch); (10) "The Processes and Effects of Compounding" (Collins); (11) "The Alphabetic Rebus" (Campagna); (12) "Structural Semantics as the Basis for Theme/Rheme" (Cummings); and (13) "Grammaticalization and Idiomatization" (Akimoto). (MSE)

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# THE TWENTY-FIRST
# LACUS FORUM
# 1994

TOBY D. GRIFFEN

*Series Editor*

# THE TWENTY-FIRST
# LACUS FORUM
# 1994

## edited by Mava Jo Powell

THE LINGUISTIC ASSOCIATION OF CANADA AND THE UNITED STATES

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FIRST EDITION

Published in Chapel Hill, North Carolina, by LACUS, the Linguistic Association of Canada and the United States, c/o LACUS Secretary Treasurer, Prof. C. Eble, Dept. of English, Univ. of North Carolina, Chapel Hill, NC 27599-3520, USA

*Manufactured in the United States of America*

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## PREFACE

The Twenty-first Forum of the Linguistic Association of Canada and the United States (LACUS) took place at the University of British Columbia in Vancouver, B.C. under sunny skies. It is a tribute to the high quality of the papers and to the deep, personal commitment of the delegates that, even in so enticing a setting, all sessions were well and enthusiastically attended. It is my very great pleasure to have been the local organizer; the occasion gave me an opportunity to reciprocate the generosity of spirit that characterizes the members of this group. The University administration and the Department of English were also pleased to host this conference. In fact, the opening remarks of Prof. H.J. Rosengarten, Head of the Department of English, were so thoughtful and far from formulaic that they appear in this volume as a commemorative welcome.

A newcomer to LACUS in 1989, I learned at first hand that its reputation is not apocrophal: it is a place-where-one-can-go-to-learn-how-to-be-a-better-linguist-without-being-embarrassed-by-asking. The papers in this volume not only attest to wide-ranging expertise but also illustrate the diversity of opinion, of subject matter and of theoretical orientation that is welcomed and encouraged. What cannot be bound between these covers are the insightful questions, the exceptionally astute observations, and the hilarious and memorable throw-away lines which occur in the discussion periods.

LACUS gives more than intellectual support. It offers annually three cash awards, the winning papers included in the first section of special lectures in this volume: Bill Spruiell, the Presidents' Post-Doctoral Prize; Lynn Messing and Niwa Nishimura special commendation in the post-doctoral category; Xiaozhao Hung, the Presidents' Pre-doctoral prize; and Suzanne Quay, the Robert DiPietro award.

These winning papers follow the 1994 Presidential Address by Ruth M. Brend. James Copeland's belated 1993 Presidental Address, delivered at U.B.C., appears in the *The 20th LACUS Forum*. The invited lecture by John R. (Háj) Ross will appear in a subsequent volume.

I wish that I could include a videotape of the banquet entertainment: poems by Kenneth Pike, translations of Hungarian poems by Adam Makkai; original songs and guitar by Sydney Lamb; an hilarious autobiographical, shaggy dog story by Julius Nyikos; a Robert Burns song by Iaian MacLeod, a Nama Hottentot poem rendered extemporaneously and movingly by Roy S. Hagman.

All this richness was made possible by generous support from the Vice-President Research, Dean of Arts, and Dean of Graduate Studies of the University of British Columbia. David Lockwood contributed his time and expertise to formatting the meeting handbook. My able coworkers were wonderful: Jumin Hu organized, supervised, and took orders for the book display; Suzanne Quay, a veteran conference organizer, helped with registration, answered questions, ran errands, stayed calm when I couldn't; and Grove Powell, my partner of decades, made many trips to the airport, helped Jim set up the book display in the early hours of morning, did last minute *in extremis* photocopying, and remained on alert.

In the organizing stages of this conference, Ruth M. Brend and I communicated weekly for about nine months and then daily for the last month. She, in turn, consulted Adam Makkai and Connie Eble, each of whom made valuable suggestions about the programme. As President and Conference Chair, Ruth's work load was very great. She undertook the work cheerfully and efficiently; it was great fun to work with and learn from her. The basket of flowers at the headtable was fashioned expressly for her, the blossoms and the greenery coming from the U.B.C. Botanical Gardens.

At last only the editing remained. To Toby Griffen, LACUS Series Editor, I am indebted for the best possible editorial advice: "Stay cheerful and a little flakey," he said.

January 1995 Mava Jo Powell

21st LACUS FORUM
UBC, 9 AUGUST 1994

## WELCOME

H. J. Rosengarten, Head, English Department
University of British Columbia

It is with great pleasure that I welcome members of the Linguistic Association of Canada and the US to this conference at UBC, the 21st such conference, and the first to be held at the University of B.C.

We recognize very keenly the distinction you have conferred upon us by choosing UBC as the site of your meetings. To be able to bring such a distinguished group of scholars to the campus is to strengthen our claim to be regarded as a major centre of research in language study. This is more than a matter of image-making; of course we want to impress administrators and government bureaucrats with a sense of our importance; but if we are to get our share of the shrinking educational budget, we have to be able to show that what we do really does matter, that we are in contact with scholars from around the globe who hold us in some esteem and want to hear what we have to say.

This is especially important to us at UBC right now. For reasons that have as much to do with politics as with the state of our economy, university education in this province has been under considerable pressure to become more efficient, do more with less, be more accountable to government, make itself more relevant to the needs of society, and so on--most of you will be familiar with this kind of language. So it matters a great deal to be able to point to bodies such as LACUS as evidence that major scholarly organizations are ready to include UBC in the charmed circle of internationally-recognized research institutions.

UBC began life on a much humbler level, commencing operations in 1906 as a small branch-plant of McGill University in Montreal--we were then known as McGill University College of British Columbia. A couple of years later UBC received its own charter, and in 1915 opened its doors to undergraduates. At first, classes were held in buildings about six miles east of here, on a site now occupied by the Vancouver General Hospital; the inadequacies of those buildings prompted the government of the day to promise a new campus out here in Point Grey, a promise that took them almost 10 years to fulfil--and then only after a public outcry led by students.

Hardly any of the buildings on the new campus had much architectural distinction. Of the few that survive, I would single out the central part of our Main Library, which was built in a quaint and quite charming imitation of pseudo-neo-romantic 19th century gothic, and which is often used in film shoots because it looks so ancient and venerable. Other buildings were more utilitarian in spirit and appearance; you can still see some of them on campus, the Old Administration building, for example, where the President has his office.

From the dozen or so buildings of 1925, we have now something approaching 500 structures on campus; but this huge growth hasn't been marked by much improvement in architectural design--UBC is something of a hotchpotch of buildings, few of which can lay claim to any aesthetic qualities. However, that may change over the next few years; the University has just completed a highly successful fund-raising campaign and has embarked on an extensive building programme. Everywhere you go on campus, there are signs--and, unfortunately, sounds--of heavy construction. At this end of the campus alone, we shall soon have a new art gallery, a 1400-seat concert hall and a magnificent new library designed by Arthur Erickson, the architect of Simon Fraser University.

Everywhere there are signs of change. These physical changes to the campus mirror the current process of change in traditional ideas about the nature and role of universities, and about the structure and mission of academic disciplines. Such ideas have always been challenged, but in recent years a combination of fiscal pressure and public scepticism has led to a much more intense scrutiny of who we are and what we do. The Humanities in particular have been challenged to justify their share of the education dollar. In a postmodern world of intellectual doubt and uncertainty, it seems we can take nothing for granted any more, not even the sacred truths about language and literature that we learned many years ago as undergraduates. Now that all truths are equal (with just a few being more equal than others), now that the notion of value has been discredited and literary works have been exposed as little more than weapons in the struggle for power, Humanities departments are hard pressed to hold on to their traditional territory, and old boundaries are beginning to disappear. Such changes can seem threatening, but in many ways they are to be welcomed; old rivalries must make way for new combinations and alliances, and widely different disciplines are already joining in new and exciting ventures.

At UBC the Department of Linguistics is one of many areas confronted by these challenges. As one of the smaller and thus more vulnerable departments, it is being asked to adapt itself to current ideas about university funding and organization, and in the process it may lose its autonomy as an academic unit. Whatever administrative changes the unit may undergo, however, there is no danger to the study of linguistics itself: linguistics is a foundational subject, and has been deeply involved with interdisciplinarity long before that word became so fashionable. Linguistics makes its presence strongly felt in English and Classics, as well as in all the language departments; it is at home in Asian Studies, in the Social Sciences, in Philosophy, in Speech Science, in Law and Education; and it has become an increasingly important element of investigations into artificial intelligence and computer science.

Indeed, there are few areas in which the study of language does not play a role; and a glance at your programme confirms this sense of the great breadth and variety inherent in the subject; linguistics, it seems, stretches from Arabic female conversation to baseball, from Shakespeare's Othello to fishing in the Maritimes. If I may borrow from the title of one of your special sessions, linguistics is truly a subject that can "[build] bridges between people, languages, and cultures." And this conference, with participants from all over the world, will surely contribute to that end.

Once again, on behalf of the University of British Columbia, let me welcome you here today. I hope that you enjoy the conference, and that you will have an opportunity to explore our city and our province.

# I

# SPECIAL LECTURES

# 1994 PRESIDENTIAL ADDRESS

# ON DISTINGUISHING THEME AND TOPIC:
## Some assistance from Madison Avenue

Ruth M. Brend
Michigan State University

## 1. Introduction.

Many scholars have studied and published on phenomena which have been variously termed topic or theme. In spite of some excellent work and a good number of useful insights, there has been little agreement on definitions. Much of the work on theme (more accurately, on theme-rheme) has been done especially by systemicists and other functionalists such as Firbas. Robert Longacre (who I might label a pseudo-tagmemicist) has proposed topic-comment structures at the sentence level (1983:300) which parallel Halliday's (1985) theme-rheme structures. Halliday postulates a topic theme (among others). Downing, on the other hand, wishes to separate topic from theme and suggests that the term 'topic' be reserved for "what a particular part of the text is about" (1991:127). She agrees with Halliday's definition of theme in part, in that she considers theme to be the "point of departure of the message" (ibid.). Theme is always, for both scholars, the initial element of the clause. Linda Jones postulates themes at various levels of a referential hierarchy, including discourse and defines theme as 'referential prominence' with 'focus' being 'grammatical prominence' (1977:6).

Then there are the many studies of text, often by composition experts, who urge beginning an essay with a 'topic sentence', and continually returning to that topic throughout the essay, and generally concluding with one last reference to it. Many scholars, also, refer to 'topicalization', where a sentence element is foregrounded through fronting as in 'It was a condo John bought.'

This paper, therefore, will try to make a small contribution to to this rather confused and confusing area of study. I wish to discuss a very limited genre--namely television commercials which prominently mention a rival product. I first began to wonder about such commercials when I heard a paper entitled "Information Flow in Written Advertising" presented at the 43rd Georgetown Roundtable, in April of 1992. In that paper, Peter Fries observed positions of prominence in written advertisements, concluding that both Theme and N-Rheme (=New Rheme) positions are positions of prominence.. New information is presented in the N-Rheme, generally located at the end of sentences, and Fries states that it is the "newsworthy part of the message". He presented convincing statistics to show that the company or product name, or features and functions of the product occurred very often in the N-Rhematic position. It occurred to me that the television commercials I had seen which mention rival products were counter examples to the advertisements he had studied, and to some of his conclusions. This led to a more extensive observation of those commercials (which I began to label 'negative' or 'attack' commercials), with a view of finding out just how the main theme of the commercial (i.e., the product really being promoted) ended up being in focus in spite of the fact that other competitive products were also highlighted and very prominent at times. Such commercials are valuable in that the promoted product or service must perforce be the over-all discourse 'topic' even if that is not obvious at all times.

I will now mention a few of those commercials in some detail.

## 2. Description of commercials under attention.

While commercials which specifically mention one or more rival products are relatively new, that basic concept has been around for some time. I'm thinking especially of the early commercials by Avis, describing their company as #2. Hertz was never mentioned, but the whole world knew who was #1. There are currently many varieties of such commercials, ranging from vigorous attacks on a competing product (or products)--and we now even have counter attacks--to those which primarily compare favorably the promoted product or service with other competing ones.

Illustrative of the former type are the current telephone company commercials. We have AT&T commercials, challenging MCI's assertion that their customers are saving more money, followed by MCI commercials replying that indeed their customers are indeed saving just pennies--thousands and thousands of pennies. In a recent commercial a beautiful bride, descending a staircase on her father's arm, stops to answer a telephone on the landing. The call is from MCI, obviously inviting her to switch her service to them. The wedding guests standing below protest about giving out their names (thus attacking MCI's Friends and Family program), and the call is at a patently inappropriate time (which the bride clearly points out), reminding the viewer of the constant barrage of unwanted sales telephone calls one receives at the dinner hour. The commercial ends with the bride's final words to the caller, "Bye-bye MCI".

Then there are the Exedrin commercials in which Tylenol is the first product mentioned, in quite laudatory terms--such as its usefulness for colds, etc.--and then, well into the spot, the speaker says something like "But I take Excedrin for headaches." Even more virtues of Tylenol follow, but the last line usually is "Excedrin--the headache medicine". Another commercial for a different product states first that neither Tylenol nor aspirin are effective.

Perhaps the first appearance of this type of commercial was the Visa one, which ended with the line "And they don't take American Express." (I will discuss a significant change in this ad later). A commercial for X-14 scum remover ends with "It's better than Lysol." Some other final lines are: "Equal--the great taste of Nutrasweet without saccharin"; "For special value, Ramada's Inn, Holiday's out"; "When you visit Spain you don't need a Visa" [an ad for American Express]; and "Fretter's price was $70.00 less than Highland's." All of these end with the competitors's name, at least in the oral part of the commercial--at times the name of the product being promoted appears on the screen in writing at the very end.

## 3. Discussion.

A number of the current (and recent past) commercials violate a variety of hitherto well accepted analyses of theme and/or topic. In some of them, one often wonders for awhile just which product is being promoted. Those commercials which end with the rival's name clearly violate many past assumptions re discourse topics, which are supposed to round-off a well-formed discourse. The Visa ads which end with the name American Express are exceptions to Peter Fries' findings that N-Rheme (as well as Theme) is a place where names of advertised products occur. In the Excedrin commercials, for example, the main topic is introduced much later than has been proposed. At first one is tempted to believe that a Tylenol commercial is being presented (though there are a few subtle hints that this may not be the case--such as the word "Sure" in the sentence "Sure, Tylenol is good for x..."; the intonation also gives a slightly negative effect). One such commercial even begins "I wouldn't ask you to give up Tylenol."

These commercials also violate proposals that the main discourse topic should be regularly referred to throughout the text, and that no other topic should be as highlighted as the main one. Here, items other than the main topic often occur in "positions of prominence"--

i.e., Theme and N-Rheme positions. At times the main topic does not appear until the very end of the commercial.

There seem to me a number of possible reasons why these commercials are successful, in spite of their violation of a number of previously-accepted analyses. One of these is that, generally, the rival item is couched in negative terms, or at least is compared unfavorably with the promoted item. Tylenol is highly praised, in the Excedrin commercials, for being very helpful in a number of ailments (colds, etc.), but not in the treatment of headaches, which is touted as Excedrin's area of effectiveness.

One change in the Visa commercials is especially interesting. In recent versions, after the phrase "And they don't take American Express" an added phrase "Visa (or Visa Gold)--it's everywhere you want to be" occurs. This makes one think that the earlier pronouncements were not all wrong--perhaps it is better to end a text with some mention of the main discourse topic.

When the rival product name DOES occur at the very end, its prominence is undermined by a negative environment or implication. For instance, the "Bye, bye MCI" ending is clearly pejorative. Another commercial (for Sweet and Lo) ends "For millions of people there's no Equal" (Equal being the name of a rival product).The negative phrasing and/or environments and connotations indicate that the product couched in such terms is not the one being promoted. (Incidentally, it's interesting to note that much of the pragmatic information transmitted--here negative information--is very culture-specific. One needs to be part of the American scene to know that annoying sales phone calls come at inappropriate times, for instance.) Another statement in current AT&T commercials is the term 'true rewards' (implying that the advertised awards of other phone companies are not really true ones). MCI commercials show that MCI did get that subtle message, since they are responding that they give real rewards, and not false ones.

## 4. Conclusions and Proposals

It would be nice to just present the above observations and to leave their application to persons working on the problems of theme and topic. However, I will venture a few remarks, in the hope that they may be useful .

First, it seems to me that it is clear that many of the earlier analyses of theme and topic only apply to certain types of genre--e.g., one in which a major topic is the central focus from the beginning to the end of the discourse. One could, I am sure, have discourses with a type of negative topic (e.g., the dangers of drugs), for which the earlier analyses are applicable. But the commercials covered here do not fit . There is not just one item which is highlighted throughout the discourse.

Secondly, it seems to me that it is most useful to distinguish between the terms theme and topic, reserving theme for the initial element in the sentence, the 'point of departure' of the message, and topic for 'what the message is about', with a scope either of an entire discourse (as in the case of commercials and advertisements) or of a large portion of a discourse. Robert Longacre and his colleagues and students have presented a number of interesting studies on the identification of participants in narrative (see 1985:127-28 and a number of items in the reference section of that volume). Some of those findings might well be useful here. For instance, in the negative commercials, one obvious feature of the discourse topic is that it always is the winner in comparison with other items.

Farther afield, all of this raises the nagging problem of the border between grammar and semantics and whether or not they should be analyzed separately. Of course linguists have long been aware that one's job is not done until both have been considered, but perhaps a distinction between the two is not really necessary in dealing with the problems under discussion. We are interested in what comprises a well-formed text, and obviously both grammar and semantic features must be included in our descriptions. I am grateful, therefore, to Madison Avenue for making me question many previous assumptions and for providing a provocative area for future exploration.

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# *Possible Sources of Participant Nominalizers: Implications for Typology.*

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Participant nominalizations have been described in a wide variety of languages, but relatively little attention has been payed to them as a class; action nominalizations have more strongly captured the interest of linguists due to their implications for theories of argument structure.[1] In particular, little or no general discussion of possible *sources* of participant noun formatives (henceforth PNFs) exists in the literature. Spruiell (1991) noted that verbal modifier + nominal head constructions (henceforth VNCs) served as functional equivalents of PNs in some languages, and proposed that they might, therefore, serve as a source of them. Other sources, possible paths of development, and ramifications of the hypothesis were not discussed, however. In this paper, I will propose action nominalizers as an additional source of PNFs, and explore the diachronic and synchronic typological implications of both hypotheses. It will be argued that there are limitations on what types of PNFs could develop from specific types of VNCs, and that such limitations are relevant to theories seeking to account for polysemy in PNs (cf. Booij 1986, Beard 1990, Spruiell 1990a, 1990b).

## 1. *Evidence for the hypotheses.*

### 1.1 PNFs from modifier-head constructions.

Spruiell (1991) argued that in languages lacking PNFs, modifier-head constructions consisting of a verbal modifier + "generic" nominal head are frequently used as functional equivalents. That is, constructions of this type are used in the same situations where PNs would be used in languages that have them (e.g., for coining names), although they are by no means *limited* to such uses. The "PN-equivalent" use of VNCs is thus a subset of their overall use. Interestingly, morphological complexity of the particular language is not necessarily a factor; both Chinese, with its comparatively simple morphology, and the much more morphologically complex Korean, use VNCs in this way, since both lack formal PNFs (Chinese from Chen, 1970; Korean from Baek, pc.):

1.a chwándàu-rén 'preacher'
preach person (p. 295)

b ài -rén 'lover'
love person (p. 208)

c fēi-jī 'airplane'
fly-machine (p. 6)

2.a mal-ha-ta 'to speak'
speak-trn.-inf

b mal-ha-nɨn salam 'speaker'
speak-trn.-prtc. person CB: *hwaǰa*

c salaŋ-ha-nɨn salam 'lover'
love-trn.-prtc. person CB/Blend: *yənin*

d salaŋ-pat-ɨn salam 'loved one'
love-pass.-prtc. person

The Chinese forms in (1a-b) are functionally equivalent to English Agentive PNs that serve as their glosses, while (1c) is an Instrumental.[2] In Korean, VNCs likewise form PN-equivalents, but with two differences, one lexical and one structural. Korean has borrowed many loanwords from Chinese, and literary Korean uses these instead of the more "clumsy" VNCs (e.g. those items marked *CB* in (2b-c). The modifier-head constructions can still be used, however, especially by those who do not know the Chinese borrowings. More interestingly, the fact that Korean uses voice-marked participials as modifiers enables a form of explicit differentiation. Note that (2b-c), formed with active participials, have an Agentive interpretations, while (2d), with its passive participial, has a Patientive interpretation. In the "bare verb" modification pattern of Chinese, any possible semantic relationship may hold between the modifier and the head; native speakers interpret these constructions, much as native English speakers interpret noun+noun compounds (cf. Downing 1977). In Korean, on the other hand, the possible range of relations is much narrowed by the voice-marking on the stem. I will term these two types of VNCs *Interpreted* and *Specified*; the difference will become relevant in the discussion of typological implications in section 4.[3]

The hypothesis that VNCs might serve as a source for PNFs derives not only from the fact that they are functionally equivalent, but that there also exist reduced forms that suggest the type of "separate word to affix" process long familiar in diachronic studies. For example, Yagua, a language of the Amazon River basin, uses verb stems suffixed by noun classifiers that are formally similar to independent nouns in the language (Payne 1975.173-5). In a sense, the classifiers serve as a type of nominalizer in that they are *required* on verb stems serving as nouns, but *optional* on noun stems. In either case, there is no additional marking on the stem, verb or noun, so that the resulting construction can be considered of the Interpreted type, in the sense discussed above:

3. a tiryǫ̀ǫ̀-jày 'sleeping mat'
lie:down- CL:pelt

b nóónoo-jąą́ 'kerosene'
light-CL:liquid

c junúuy-nu 'alive one'
live - CL:ANIM:SG.

Telugu, a Dravidian language, provides an example of a Specified type with reduced head elements. Derived participial forms can be used with either full nominal heads (4a) or reduced pronominal clitics (4b). (Krishnamurti and Gwynn 1985.240-243):

**4.a cepp-ina maaTa 'spoken word'**
**speak-PastPrtc. word**

**b wacc-ina-waaDu 'the man who came'**
**come-PastPrtc.-3sm**

As can be noted from (4b), constructions of this type are glossed as relative clauses. Functionally, however, the distinction between relative clauses and PNs (and common nouns in general) is not a firm one, having to do more with factors such as breadth of application than to a fundamental difference in type of reference (cf. Gupta 1980).

There also exist VNCs in which the head, according to one analysis, has been reduced to the point of exinction. These "headless participials" are common in Indo-European languages:

**5.a Der Freigeschprochene war kein Armer (German)**
**"The acquitted (person) was no pauper"**

**b tà deónta (Classical Greek)**
**ART order-PASS:PRTC (Smyth 1956.455)**
**'duties'**

**c The dear departed.**

Constructions such as this pose an analytic problem: if one adopts the hypothesis that there is a null head involved (and there are reasons for such an analysis in English, at least), then they can be seen as simply a highly reduced form of Specified VNC.[4] On the other hand, they could be considered dual-class forms, derived items which can function as modifiers or as heads, in which case they consititute a kind of (formal) PN already. The latter analysis may be favored in languages which do not distinguish between an adjective and a noun class, especially if participials are used frequently in this way.

1.2 PNFs from Action Nominalizations.

It is quite common to find that action nominalizations have, as alternative interpretations, concretized "resultative" or "factive" meanings referring to the condition or object that results from the action. English provides a plethora of examples, e.g. *motion* (as passed by legislatures), *agreement* (referring to the document establishing the accord), and so forth.[5] Spruiell (1990a.263), in a survey of 58 languages, found that factive nominalizations frequently had action nominalization interpretations as well, although action nominalizations did not as predictably have factive interpretations. In addition, it was rare for factive nominalizations to have interpretations *other* than as action nouns. This type of pattern is consistent with the hypothesis that factives develop from action nouns, although it does not prove it.

The problem, of course, is that the close connection between action and factive interpretations does not establish the primacy of either pole of the opposition: it could be that factives develop from action nouns, or that action nouns develop from factives (or both, varying among languages and particular formatives). It is also possible that action and factive interpretations are so easily interchangable that any action noun will automatically have the possibility of a factive reading, a situation which would render the phrase "develops from" erroneous. Given the available information, however, the "factives from actions" hypothesis appears to be the more plausible than other possibilities. Almost all languages with morphologically marked derivation have some way of forming action nouns; if it were the case that action nouns result from factives, then we would also expect all languages with action nouns to have some formally identifiable class of factives, or that there would be evidence that they at one time had factives. In addition, specific types of action nouns may be unlinked to factives; for example, there are comparatively few cases of English gerunds formed with *-ing* having factive interpretations — it is the more lexicalized nominalizers *-tion* and *–ment* that do so.

Although I am postulating that action *nominalizations* form factives by extension, I am to a certain extent begging the question of whether action *nouns* in general may do so. The specific problem one encounters here is that of lexemes such as English *run*, which can be used as verbs or as nouns with either action or factive meanings (*I ran* vs. *I went for a long run* vs. *I've a run in my stocking).* Such a example brings up the classic debate about "zero derivation" vs. "multiple class membership" vs. "homonymy", an issue which I cannot deal with here. However, I will for reasons discussed below consider them as being Interpreted analogs of the (Specified) headless participials discussed above.

## 2. *Possible Paths of Development*

In section one, I proposed that PNs might develop from four different kinds of VNC: Specified constructions with reduced heads, Interpreted constructions with reduced heads, Specified constructions with null heads (headless participials), and Interpreted constructions with null heads. The question remains, however, of how such constructions could give rise to PN *formatives*, which is the main question of this paper. Obviously, changes must take place which result in formal differentiation of stems or derived non-PN items from PNs. Such a process is easiest to envision with reduced-head Specified constructions (such as those in Telugu):

△1 The participial affix and the reduced head affix fuse due to phonological change.

Such a shift would obscure identity between participials and full PNs, and is of a rather common diachronic type (phonemes affecting adjacent phonemes in unstressed environments). In the case of Interpreted constructions with reduced heads, such as those in Yagua, the changes would need be more complex:

△2 The formal similarity between classifier affixes and independent nouns is obscured by phonological processes.

Again, since classifier affixes occur as unstressed units, it would not be phonologically unusual for them to reduce in ways independent nouns would not. For Yagua in particular, it would also be necessary for classifier affixes used with non-derived nouns to shift from being optional to prohibited (if one were to get a full PNF as opposed to a multi-purpose affix). For Interpreted+head VNCs in general, however, △2 is the only basic change needed.

In the case of Specified constructions with null heads, one would need a type of change which eliminated the formal identity between the participial suffix used when there is a following noun and that used when there is no following element. This is a more problematical type of shift, as it does not involve the more common sound changes such as those resulting from segment adjacency or reduction in unstressed environments. It is at least possible, however, that *phrase*-final phonological effects (devoicing, perhaps) could cause the necessary change:

△3 Phrase-final phonological change differentiates headed and nonheaded participials, leaving the second type as a formally distinct PNF.

One might wish to extend such a change to allow for development of PNs from Interpreted headless constructions as well (one could not derive a *formative* in this way, since what I am considering an Interpreted headless construction is simply a verb stem, but one could derive formally distinct noun forms). However, in its "verbal" form the stem is *also* phrase final, so that, all things being equal, △3 wouldn't differentiate them. Only if there is actually a "psychologically real" null head element, so that the verbal form is indeed phrase-final and the nominal form is not, would there be grounds for differentiation — and in this case the shift would work in reverse (the verb would differentiate):

> △4 Phrase-final phonological change differentiates bare verb stems from those with null heads.

To summarize, it is *a priori* possible to postulate sound changes which would produce formally distinct PNs from all four types of VNC, and distinct PNFs from both types of headed VNCs as well as headless participials. However, only those changes proposed for the headed constructions resemble common sound changes such as those observed frequently in natural languages.

No sound change, of course, is necessary for semantic extension; the hypothesized development of Factives from Action nominalizations would simply involve the shift itself. Only a formally distinct Factive would involve such a shift, and I cannot conceive of a sound change which would produce the required effect (i.e., which would operate to differentiate the action nominalizer from the factive nominalizer).

## 3. *Typological Implications*

### 3.1 Diachrony

So far, I have proposed diachronic sources for PNFs, but I have not related these to any form of generalization about the types of languages PNFs could develop in or the types of PNs that could develop. Semantic extension, the source argued for Factives, is a process which happens in all languages regardless of their syntactic type or degree of morphological complexity; we cannot, then, say that Factives are more likely to develop in one type of language than another. The case with VNCs is different, however: the position of the head element relative to the modifier is of crucial importance. I have been assuming throughout the previous discussions that PNFs are canonically *suffixes*, for the simple reason that I have never encountered a PNF *prefix*. This does not, of course, indicate that such do not exist; however, it is a reasonable indication (given the number of languages examined in the study leading to Spruiell (1990a)) that they are less common than suffixes. For VNCs to give rise to PNFs, and for the sound changes discussed above to operate, the head must follow the modifier, a characteristic of SOV languages and some SVOs, but not VSOs. Thus, if the proposed paths of development are substantially correct — and the *if* cannot be sufficiently stressed as this paper represents, basically, a thought experiment — we can derive a prediction and a corollary of that prediction:

P1 PNFs will not develop in languages with head-modifier word order.
P1' Presence of PNFs imply an earlier modifier-head stage.

Although such predictions look quite appealing, they are, in essence, the same type of predictions that can be made about suffixes in general, and derive (rather circularly) from my assumption that PNFs are exclusively suffixes.

More interesting predictions, however, can be made on the basis of connections between the proposed sources and *types* of PNs. I will argue that different types of source constructions (Interpreted vs. Specified) may give rise to different types of PNs, a hypothesis with some interesting ramifications. Since I will be discussing a variety of PN types, I will provide a brief taxonomy as a definitional base (Table 1). It should be noted that frequently a given PNF will denote a category which conflates two or more types; the *-er* nominalizer in English, for example, is both an Agentive and an Instrumental nominalizer (I somewhat arbitrarily use the Nonspecific label from Table 1 for cases in which more than three categories are involved).

| | |
|---|---|
| Agentive | Denotes the agent of the action denoted by the verb; e.g. *singer*. |
| Patientive | Denotes the patient of the verb's action, which is affected but pre-exists action. |
| Thematic | Denotes patient or less involved/ non-volitional agent of verb's action; e.g. *attendee, employee* |
| Instrumental | Denotes instrument by which verb's action is accomplished. |
| Locative | Denotes place associated with verb's action. |
| Factive | Denotes object or condition resulting from action of verb; e.g. *building*, which does not pre-exist action. |
| Nonstandard | A "variety" category comprised of PNs with specific meaning types which do not correspond to standard participant roles; for example, "Sonic" PNs which refer to the sound made by the action of the verb. |
| Nonspecific | Denotes a wide range of possible participant relations; i.e. marks a PN (as opposed to an action noun) but not what semantic type of PN it is. |

Table 1: Types of PNs

If the hypothesis that PNFs develop from VNCs is correct, then it follows that the distinction between Interpreted and Specified VNCs could be reflected in the types of PNs that develop from them. The type of voice-marking involved in Specified

VNCs involves participant roles — agent, patient, theme — while the range of relations holding between the elements in an Interpreted VNC is open-ended. This difference in role-marking could be related to the types of role-relations PNs metonymically encode.

The types of PNs given in Table 1 can be roughly divided into three categories: (A) those related to nuclear roles (Agentive, Patientive, Thematic), (B) those related to peripheral roles (Instrumental, Locative), and (C) those not related to any standard grammatical role (Factive, Nonstandard, Nonspecific).[6] Specified constructions could be expected to easily give rise to those in the first category, depending on the exact nature of roles encoded in the language's system of participials. For example, one might expect to find a Thematic developing in an ergative system and a Patientive in a nominative-accusative one. In short, whichever distinction between nuclear participant roles is marked by different types of participial suffixes could, in principle, be reproduced in the PN types developing from them — a point relevant to synchronic theories of PN meaning, as discussed below. Interpreted constructions, of course, could also develop into any of the nuclear role types, but unlike Specified constructions would not necessarily reflect the languages' marking pattern in the same way; e.g. an Interpreted construction in a nominative-accusative language could give rise to Thematic, whereas a Specified construction (with "nominative" participials) could not.

The intermediate category, comprised of peripheral-role related items, is more problematic. In nominative-accusative systems, Instruments can serve as Subjects quite frequently (e.g. *The axe opened the door quite handily)* and thus could logically develop from Specified constructions as well (Instruments can, after all, be viewed as a kind of inanimate agent; cf. also Beard 1990 on the conflation of Instrument and Agent in nominative languages). It is less easy to imagine Locatives developing from Specified constructions; although it is true that locations do sometimes affect others or are affected (e.g. *burned place*), Locative PNs most frequently denote a place *where one does something*, not a place one does something to or which does something to one. With Interpreted constructions, of course, there would be little difficulty; Instruments would be derived from constructions with headwords referring to generic objects ("thing") while Locatives would be derived from constructions with headwords referring to a generic location ("place").[7]

Types in the third category, those not corresponding to any traditional grammatical role, should, if my hypotheses prove correct, not develop from Specified constructions. Factives are, in general, an odd category: it is quite useful to name something after the action which uniquely produces it, but it is not very useful in clausal morphosyntax to have a separate category only for the results of actions. Thus, Factives are frequently lumped with more canonical Patientives outside the lexicon, but have a separate place within it. It is difficult to imagine them developing from Interpreted *or* Specified constructions, since (in both cases) one would originally need an appropriate, yet generic, head word. Action nouns remain as the most likely source. Nonstandard PNs are not problematical as potential developments from Interpreted constructions: all one needs is a head noun; e.g., Sonic nominalizations would simply be derived from a construction with "sound" or "noise." Nonspecific PNs are a different type of problem entirely; the best hypothesis I can devise for their development is that semantic drift of other PN types could, over time, "bleach" a PNF to the point where speakers cannot isolate a particular meaning for it.[8]

Figure 1, below, presents a schema which summarizes the arguments presented above. Typologically, the proposed schema embodies several predictions:

P2 Locatives and NonStandard PNs will only develop from Interpreted constructions.

P3 Factives only develop from Action nominals.

An additional prediction, not apparent from the schema, can also be made:

P4 PNs developing from Specified constructions will mirror the role structure used in the language's clausal morphosyntax as it is realized in participial marking patterns; those developing from Interpreted constructions need not.

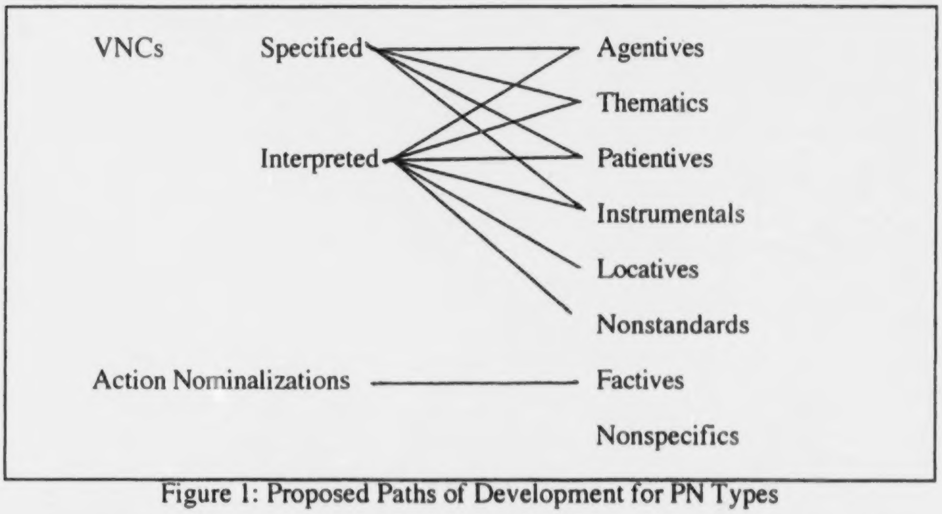

Figure 1: Proposed Paths of Development for PN Types

The predictions made about PN development should be taken as a beginning point only; I will not be particularly surprised if they prove to be false, or at least have many exceptions. The proposal as it now stands, for example, does not take into account the possibility of semantic drift from one PN type to another, a process which is quite likely given the number of role-conflated PN types in world languages. The proposed developments would only hold true, in any case, for an *initial* condition, a picture that would be progressively blurred due to semantic drift and cross-linguistic influence. Nevertheless, the proposals do constitute a convenient basis for further research; they are testable against historical data, and, if substantially validated, provide information usable in internal reconstruction.

### 3.2 Synchrony

Beard (1990), in a study of polysemous PNs (i.e. those which represent more than one role, such as Agentive/Instrumental, which I term "conflated" PNs) advanced the hypothesis that such role conflations mirror those in the clausal morphosyntax of the language the PN type is found in, and that such isomorphism is the result of the existence of a single level of representation at which different semantic roles combine into a smaller number of grammatical role categories.For example, in Beard's theory the reason English has an Agentive/Instrumental nominalization is that the semantic roles Agent and Instrument conflate into a single grammatical role in nominative-accusative languages, and both clausal morphosyntax and PNs use the same set of grammatical role categories. This hypothesis allows Beard to account neatly and elegantly for a typological pattern in which nominative-accusative languages have Agentive/Instrumentals while ergative languages have separate Agentives and Instrumentals. Spruiell (1992), in a comparison of theories of PN meaning, argued for a weaker position in which isomorphism may occur but is not a universal, on the grounds that a number of PN types exist in some languages that do not fit into role schemata used for morphosyntax (e.g. Nonstandards).

The hypotheses advanced in this paper, if substantiated, provide a separate means by which conflational isomorphism might be accounted for: the claim that PNs developing from Specified VNCs will mirror the language's role-distinctions as encoded in participial affixes (P4). At the same time, Interpreted constructions might develop into nuclear-role PN types which do *not* mirror the morphosyntactic role-schema of the language, so that both isomorphic and nonisomorphic systems might develop. These are, however, *diachronic* statements; if isomorphic systems develop from Specified constructions, it might still be the case that in *synchronic* grammar they are realized as a separate, unified level of roles. Likewise, the possibility that Interpreted constructions could develop into nonisomorphic systems does not entail that they must do so; if Interpreted constructions are more plastic in their development, it could easily be the case that existing role schemata "shape" developing PN systems.

It must also be added that, although the preceding arguments constitute speculation about the development of possible types of PNs, they do not take into account questions of how *common* specific developments might be. For example, Figure 1 implies that both Agentives and Patientives are equally possible developments; however, Agentives are far more common than Patientives (as opposed to Factives), a fact that the diachronic arguments cannot account for at all. A separate system of *pragmatic* onomasiological constraints may exist which acts to enhance or depress the formation of particular types of PNs (cf. brief discussions in Spruiell 1990b,1992). The status of someone as a habitual performer of an action is a good basis for a name, while it is less likely that someone is the habitual patient of an action; Agentives may simply be more useful than Patientives.

In cases of full conflational isomorphism, in which the PN types exactly mirror type types of role conflations found in clausal morphosyntax, Beard's (1990) theory provides the simplest possible explanation. Claiming that two identical systems exist due to parallel historical development is much less elegant than claiming that one system exists which is realized in two different loci. Where alternative explanations might be useful is in cases of *partial* isomorphism, in which one or more conflational PN types in a language mirror conflations in morphosyntax, but others do not (e.g. an ergative language with both Agentive *and* Agentive/Instrumental nominalizations). Diachronic and pragmatic explanations would allow for both the isomorphic and nonisomorphic characteristics of the system; e.g. a nonisomorphic PN type could exist due to a separate development from Interpreted constructions, or a logically possible isomorphic PN type could be absent due to pragmatic factors.

## 4. Conclusions

The arguments presented in this paper represent a simple form of the "what if" game: I have experimented with the notion that PNFs *could* develop from two major sources, and have (again hypothetically) explored the ramifications of that concept. Conceptual experimentation, however, can never take the place of empirical evidence; such an experiment is justified only as a starting point, a type of plan for further research. Hypotheses advanced in this way must be tested before their implications can be applied to broader theoretical discussion, although it is important to keep in mind that they may be quite relevant to it. Current research on PNs is mostly confined to the issue of how the role categories they involve relate to theories of role assignment in morphosyntax (e.g. discussions of θ-theory and inheritance; cf. Carrier-Duncan 1985, Hoekstra 1986, Jackendoff 1987) and thus to the larger issue of the relation between lexical and syntactic information.[9] Diachronic studies, especially cross-linguistic ones, are lacking, as is detailed information on PN phenomena in non-European languages. Additional research is thus sorely needed.

## Notes

1. I am using the term *participant nominalization* to refer to deverbal nouns which are not action nouns; e.g. those such as *driver* or *lessee* but not *construction*. Some analysts use the term *argument nominalization* instead.

2. Similar constructions are used in Melanesian Pidgin English, and were noted by Hall (1943.21) as being functionally similar to PNs: "The nouns ... used in this type of compound have almost the function of suffixes forming nomina agentis."

3. The term *participial* is problematic here in that it is used by different grammarians quite differently. In the discussions in this paper, I will use *participial* to refer to derived verb-forms (a) which can be used as modifiers to nouns and (b) which stand in a role relation to that noun marked by the participial formative. I am thus *not* including verbal modifiers which encode aspectual distinctions but not role information (in English, of course, the participles do both).

4. Headless participials in English tend to be heavily lexicalized and/or dependent on context. For example, one can use a form like *uninvited* as a noun only if preceding context allows ("*The party was a formal affair open only to those with invitations. The uninvited were quickly shown the door.*"). Such usage is easily interpretable as involving a null head anaphorically connected to the preceding context. This cannot, however, be said of other languages allowing headless participials. Smythe 1956.455 notes that such items were quite common in ancient Greek.

5. What is needed, of course, is a typological base of observed cases of semantic drift. It is much easier to reconstruct the *form* of a given morpheme than to determine exactly how many semantic interpretations it had. For example, Meillet (1964: 274) reconstructs IE protoforms *-teu and -*men as action noun formatives. Reflexes of these forms in daughter languages could have factive interpretations, so on the surface it might appear that the IE "action" state had given way to a later "action/factive" state. However, it would be very difficult to establish that the IE protoforms did *not* have factive interpretations, since very early daughter languages already had them. Although I find the "factives from actions" hypothesis more intuitively plausible, and will use it as a working assumption for this paper, the alternative needs to be investigated as well.

6. Although I am deliberately avoiding a theory-specific definition of "roles" at this point, I am primarily concerned with those useful for accounts of clausal morphosyntax; e.g. the type of agent/patient distinctions which allow for insightful descriptions of passives, etc. I am not referring to wider sets of "semantic roles" which may influence lexical choice but are not reflected by differences in clausal marking patterns.

7. Objections might be raised at this point around terms such as *threshing floor*, in which a (Specified) participial form occurs with a head noun. In English, however, participials encode aspectual as well as role information — a progressive participle is also an active participle. Items such as *threshing floor* can thus be interpreted as *place where the action of X-ing takes place* and thus as not being "Specified" constructions in the sense used here. However, the point is nonetheless relevant, since it raises the possibility of a different *type* of participial giving rise to PNFs via VNCs. This would cause an analytic question only in languages with "dual purpose" participials like English, and for purposes of this paper I will beg it.

8. There is, of course, one major source of PNFs that I am ignoring entirely: borrowing. Interestingly, one of the best examples of a Nonspecific PN noted in Spruiell 1990a was a borrowing into Ladakhi of the Tibetan nominalizer *-pa* (Koshal 1979).

9. The vast majority of such work has been limited to discussions of action nouns and Agentives with *-er/-or* or one of its Indo-European cognates.

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# WINNERS OF PRESIDENTS' POST-DOCTORAL COMMENDATIONS

# BIMODAL COMMUNICATION:
# WHAT IS IT, AND WHY STUDY IT?

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## Introduction

One way to address the question of the relationship of the languages in a bilingual's mind is to examine the contact phenomena which are manifested in a bilingual's language performance. These phenomena include code-switching, relexification, and borrowing. It has only been in recent years that researchers have begun to investigate these contact phenomena when they involve the visual mode instead of, or in addition to, the oral mode. Deucher (1978) indicates that sign languages, as well as spoken ones, can be involved in diglossia. Griffith (1985) discusses the code-switching of hearing children with deaf parents. Several researchers (e.g., Akamatsu and Stewart 1989, Kluwin 1981, and Maxwell and Bernstein 1985) examine bimodal individuals' abilities to use simultaneous communication.

Very little research has been conducted, however, to determine the conditions under which bimodal communication occurs. Messing (1990:460) defines bimodal communication (BC) as a phenomenon which occurs "when a person speaks (or mouths) and signs a given word or concept at the same time." BC can occur with either the spoken or the signed language being the primary one used in a given conversation.

BC should not be equated with simultaneous communication. Stokoe (1970) states that simultaneous, or total, communication is an aural and a visual communication system for the hearing impaired[1] which involves the simultaneous use of signed and spoken English. As such, people using simultaneous communication (SC) attempt to sign everything they say. In contrast, people using BC are not attempting to communicate everything in both modes. Their intent is to communicate in only one of the languages[2]. Bilinguals might even use BC when speaking with someone who they know does not understand any sign. In that event, they may use some signs without even being aware that they are signing, or at least without making a point of signing. Furthermore, it is possible that only a very small number of words or concepts will be communicated bimodally throughout a conversation. For example, an individual might say, "I have to call Bob today about an important meeting." If he were using SC, he might sign I MUST TELEPHONE #B-O-B# TODAY CONCERNING IMPORTANT MEETING; whereas, if he were using BC, he might articulate only the sign TELEPHONE. The appendix contains all of the instances of BC which occurred between the scenarios for one dyad in each level.

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[1] The term "hearing impaired" is used here to include both deaf and hard of hearing individuals. The author recognizes that the use of these words is not without controversy, and requests the forgiveness of any readers who find their use offensive. Unfortunately, there are no universally accepted alternatives.

[2] There is evidence that, at least in certain instances, the signing is actually American Sign Language (ASL), and not merely a Manually Coded English (MCE). In these instances, ASL syntactic devices not found in English were employed in the BC. Examples of such devices include number incorporation in time signs, directionality of verbs to indicate a sentence's subject and/or object, and the use of classifiers.

Messing (1990) has conducted the only research reported to date on BC. She developed a pilot study to see whether signers at Gallaudet University believe BC to be a common phenomenon. Eighty-nine percent of the individuals who completed her survey believe that they use bimodal communication. Only three percent believe that they do not use it. The remaining eight percent were not certain. Thus, Messing's research indicates that further study of the phenomenon of BC is warranted. Her study is useful in indicating signers' beliefs concerning their use of BC; however, participants' answers to the survey cannot be taken to be an accurate assessment of what they actually do with regard to BC; introspection often yields inaccurate results (Labov, 1966, 1972). Consequently, an experiment was conducted to provide empirical data on BC usage. The design of the experiment will be discussed in the next section.

## The experiment

Videotaped conversations were analyzed to test the following hypotheses with respect to pairs of hearing female signers who were communicating primarily in English:

1. BC occurs; i.e., Signers actually introduce signs into their gestural stream when they communicate in English with other hearing individuals to a greater extent than non-signers do.

2. People with different levels of signing ability differ in the amount of BC they use. The relationship between signing ability and amount of BC will be linear; i.e., the greater the signing ability people have, the more BC they will use.

Although both signers and researchers in kinesics are aware that communication occurs by means of many body parts, this study focused on the movements of the subjects' hands. Only a relatively few morphemes in American Sign Language (ASL) are not articulated with the hands; the non-manual signals are used more as syntactic devices, to convey attitudes, etc.. Consequently, confining the focus of this study to the subjects' manual movements did not compromise the integrity of the research, and it greatly eased the analysis. The study of bimodal communication using parts other than the hands is saved as a topic for future research.

Hearing women were asked to perform five different scenarios (A scenario is similar to a role play. See Di Pietro (1987) for details). They were videotaped not only during the performances, when they expected to be videotaped, but also between each pair of performances. The subjects were not told until after the taping that the between-scenario data would also be used for research purposes. None of the subjects elected to drop out of the study, after they were informed of the scope of the research.

The subjects, female paid volunteers[1], ranged in signing skills from non-signers to sign interpretation students. All of the signers learned ASL as a second/foreign language. Their skill level was initially determined by the level of the sign class in which they were enrolled. The twenty women who knew no sign, and who were not enrolled in any sign classes, were labelled "non-signers". The twenty ASL I students were classified as "beginners". The two ASL II and the four ASL III students were grouped together as "intermediate signers". The two ASL IV and the four sign interpretation students were labelled "advanced signers". A test of their ability to translate five specific sentences into ASL confirmed that the initial groupings accurately reflected their abilities.

Subjects were paired according to skill level, so that both members of a dyad performing the scenarios were in the same skill level group. They were told that the experiment was to examine how people solve the problems presented to them in the scenarios. They were directed to behave in the scenarios as they would in real life. No mention was made about language choice. Any questions they had about the procedure were then answered. In the rare instances where they brought up the question of which language to use, they were reminded that they were to behave in the scenarios as they would in real life.

After each scenario, they were encouraged to discuss what occurred during the performance: what their goals were, what they knew that their partners didn't, how well they thought they did, etc. The camcorder continued to record them during this discussion.

It was obvious from the behavior of the very first dyad that the language use between scenarios was different than that used during scenarios. As several subjects stated during the debriefing following the performances, they felt like laboratory rats during the scenarios. They were extremely self-conscious and "on their best behavior" then. Between scenarios, however, they were much more relaxed. Even though they could see that the camcorder was still running, they didn't believe that their behavior between scenarios would be scrutinized; hence, their behavior was less affected by experimental factors then. Consequently, the results section of this article will focus on the subjects' between-scenario behavior. The within-scenario data will be presented in a future edition of *Sign Language Studies*[2].

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[1] Many thanks to the teachers at Gallaudet University and the University of Delaware who let me enter their classrooms requesting volunteers, and many thanks to the students who participated.

Coding.

Two coders independently viewed portions of the videotapes with the volume off. They recorded each instance of a sign which they saw. They then replayed the tape with the volume on, and recorded what was being said when the sign was made. In the extremely rare instance when a sign's meaning was not relevant to the spoken message, it was decided that the "sign" was actually a non-sign gesture. The coders reached an 80.26% exact agreement on the signs in the data. This statistic is actually a gross underestimate of the true reliability. The agreement was counted only if both coders recognized a gesture as a specific sign. The reliability statistic does not take into account the numerous occasions on which both coders thought a gesture was NOT a sign, nor the rare occasion when both coders recognized a gesture as a sign, but disagreed on which sign.

After this reliability was reached for ten per cent of the data, the primary coder then recoded the entire corpus. In order to obtain the instances of bimodal communication, all occurrences conveying a proposition via sign alone, via simultaneous communication, or via a sequential code-switch or sequential borrowing were eliminated. The number of signs each dyad made between scenarios was then converted into a rate of signs per hour.

Results.

Table 1 shows the rate of signs per hour for each skill level. It is immediately obvious that BC rate increases with increased signing ability. Furthermore, an ANOVA shows that the differences are statistically highly significant: $p<.0001$. Therefore, the gestures accompanying the speech of the signers do differ from the gestures performed by the non-signers; signers interpolate signs into their gesture streams, even when they do not have the intent to communicate via sign.

Table 1. Inter-scenario BC rate by signing levels

| signing level | MEAN RATE | SD |
|---|---|---|
| non-signers | 3.33 | 7.26 |
| beginners | 8.70 | 13.15 |
| intermediates | 28.67 | 49.65 |
| advanced signers | 97.33 | 27.04 |

Reasons to Study Bimodal Communication

Bimodal communication is a phenomenon which is worth examining for both theoretical and practical reasons. Because it is impossible to study the mental processes of bilinguals' language interaction, it is necessary to study the product of

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2. Suffice it to state here that the relationship between signing level and BC rate within scenarios was an inverse-U.

such interactions in order to deduce the process. This is one of the main reasons that code-switching (CS) has been studied. Code-switching between oral languages, however, requires a sequential use of the two languages. BC, which permits the codes to be expressed simultaneously, provides additional clues to the possible interactions and, hence, the relationship of the two languages in the bilingual's mind. Research on BC thus complements the code-switching literature.

Similarly, a study of BC complements the research on simultaneous communication (SC). Whereas the latter research focuses on how much data conversants can convey simultaneously in a spoken and a signed language when they are trying to convey their entire messages in both modes, the former research would shed some light on how much data conversants will convey in both a spoken language and sign when they are not trying to convey their messages in both modes. SC research can thus be seen as the study of the maximum possible interactions between two languages. BC can be seen as the study of the minimum possible interactions. A study of BC is better for this than a study of CS, because individuals who are code-switching between two oral languages must express themselves in only one language at a given time. People who are code-switching must choose which language to use; individuals who are using BC need not make such a choice. Consequently, even if a word were accessed in both languages, only one form of the word would be likely to appear if the individual can only code-switch, whereas both may appear if the speaker can use BC. Consequently, a study of BC is more likely than a study of CS to reveal the extent to which elements from both languages are accessed when a bilingual speaker converses.

On a more theoretical level, Kendon (1988) has suggested that the line between signs and gestures, and hence the line between language and gestures, is a blurred one.The fact that signers do gesture differently than nonsigners provides additional evidence in support of Kendon's hypothesis. Kendon had further argued that one cannot use meaning to differentiate signs and gestures, since certain types of gestures [1], as well as signs and words, can be used to convey meaning. Nor is it possible to use neurological data to separate the two. Speech, signing, and gesturing are all generally located in the left hemisphere of a right-handed person's brain (Crystal, 1987, Faglioni and Basso, 1985, Foldi, Cicone, and Gardner, 1983). The frontal parietal lobe plays an important role in the production of both signing (Crystal, 1987) and gesturing (Faglioni and Basso, 1985). If, indeed, gestures are not completely distinct from language, then it would behoove linguists to pay more attention to them, even though they are generally considered to be non-linguistic elements of communication.

Finally it would be useful to inform students learning to sign of how commonly BC occurs. This knowledge might prevent them from feeling abnormal for their use of BC. Anecdotal evidence, volunteered by some of the subjects in the debriefing phase of the experiment described above, indicates that nonsigners sometimes criticize signers because they find signers' gestures to be distracting. The criticism can be severe enough to make the signers quite uncomfortable. If signers were aware of the commonality of BC, they might not feel so uncomfortable in their interactions with others.

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[1] Ekman, P., & W. Friesen (1969) and Ekman, P. & W. Friesen (1972) describe these types of gestures, which they call emblems and illustrators.

Summary.

Bimodal communication (BC) is the introduction of individual signs into a spoken English interaction, or the introduction of individual English words into a signed conversation. It differs from code-switching, as code-switching is usually defined, in that it involves the expression of two codes simultaneously, rather than sequentially. This paper describes some of the results of the initial experiment exploring the usage and the patterns of occurrence of BC among hearing female $L_2$ signers[1] who are conversing in English. Further study of BC will be useful not only to sociolinguists, but also to psycholinguists, and to linguists in general. It gives us another piece in the puzzle of how languages are stored and accessed, and how they can interact in a bilingual's mind.

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# APPENDIX

## Samples of BC

This appendix contains all of the samples of BC which occurred after scenarios for one dyad in each level.

The data is presented in the following format:

1. One header per dyad containing information on the dyad's signing level.
2. One header for each conversation stating its length in the format *minutes.seconds.*

Each entry contains:

1. The time elapsed (in the format minutes.seconds) from the beginning of the conversation when a sign occurs.
2. Which person made the sign (i.e., The person who played role A or role B.)
3. An English gloss of the sign.
4. A semi-colon followed by a portion of the utterance containing the sign. The actual words being spoken at the time the sign was articulated are underlined.

N.B., The time listed for the period between scenarios is the time the dyad actually spent talking (as opposed, for example, to reading their roles for the next scenario). The time listed for when a sign is articulated is the time elapsed from the prior scenario. Therefore, it is possible for the time between scenarios to be listed as one minute; but to have a sign articulated after a minute and a half. This would mean that at least half a minute had already been spent in an activity other than talking.

### Non-signers

No BC occurred after Time scenario (0.20), News scenario (0.20), Joe scenario (0.31), Surprise scenario (0.19), or Key scenario (0.19)

### Beginning signers

No BC occurred after Key scenario (0.20), Surprise scenario (0.18), News scenario (0.48), Time scenario (0.10), or Joe scenario (0.17)

### Intermediate signers

After Key scenario (0.58)
0.21 B picture, photo (NB: NOT apt in ASL!); I was picturing, I was picturing you at work
0.46 A never; no, no, no

After Surprise scenario (0.59)
0.03 A tend; I have a tendency to wanna
0.25 A quote; And as most guys say, "..."
0.27 B why (casual sign: arm horizontal.'Y'hand); The reason was
0.35 B HAHA (fingerspelled); hahaha

After News scenario (1.22)
0.22 A you-give-me (B hand, palm up); Give me the paper to sign something now
0.22 A write; Give me the paper to sign something now

After Time scenario (2.18)
2.14 B write; Getting the program written out
2.19 B pop up ('1' RH HS through '5' LH HS);Yeah, the first thing that popped into my mind was architects'
2.24 B look, read; for somebody to look at

After Joe scenario (2.45)
0.01 A phone; That was 9-1-1
0.02 B HAHAHA (2 hands); hahaha
0.23 A awful (signed with left hand); That's just an awful joke!
0.44 A phone; and just call my wife
0.56 B cop; she'ld be talking to the police
1.00 B stop; time to stop the joke
1.13 A phone (imitating herself speaking on the phone); And I'm like, yep
1.13 B siren; And then we start hearing, "Woooo" ("Woooo" is a siren imitation)
2.06 B awful; That's an awful scenario

## Advanced signers

After News scenarios (0.48)
0.47 A think; So I had, like, all these concerns

After Joe scenario (0.55)
0.08 A to split, depart rapidly; I left and called the police
0.08 A '1' dez (indexing: vicinity); I left and called the police
0.35 B tease (x-hand; one handed); to tease, to play a joke on you
1.17 A she (statement spoken to me re: B); you got an actress here

After Time scenario (0.54)
0.05 A jaw-drop (bent 'v'); Her face dropped
0.20 B now; like right now, and next week
0.20 B 1-week-from-now; like right now, and next week
0.47 A split, depart rapidly (made w/ reduced motion, such that hands never come together); I wanna get out of here
1.16 A you; What was your side?

After Key scenario (0.46)
1.48 A you (NB: Made over the shoulder,: they were back to back); You call me

After Surprise scenario (0.27)
0.20 A she; She appeals to my friendship side
0.20 A I; She appeals to my friendship side
0.20 B I, touch-heart (NB: B made these in agreement (back channel utterance) with A while A was speaking. B said nothing.); A: She appeals to my friendship side

# THE USE OF JAPANESE TOPICS IN BILINGUAL DISCOURSE IN JAPANESE AND ENGLISH

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## The present study

In many bilingual communities, alternate use of two languages in a single situation often arises, code-switching. The alternation is often rapid and smooth, and can occur even within a sentence, as in ( 1 ):

( 1 ) a. Malay/English (Romaine 1994)
This morning I *hantar* my baby *tu dekat* babysitter *tu lah.*
'This morning I took my baby to the baby sitter.'

b. Spanish/English (Poplack 1980)
And from there I went to live *pa' muchos sitios* ('in a lot of places').
*Despues vivi en la ciento diecisiete* ('then I lived on the 117th') with my husband.

Bilingual code-switching has been studied tremendously in the past decade or so. Socio-oriented linguists have examined why and for what purposes bilingual speakers code-switch in various communities (Blom & Gumperz 1972; Gumperz 1982; Heller 1988; Myers-Scotton 1993; Nishimura 1994 in press; Gardner-Chloros 1992; among others). Syntactic-oriented linguists have attempted to formulate the rules of intrasentential code-switching based on many different language pairs, using various frameworks (Belazi, et al. 1994; di Sciullo et al. 1986; Joshi 1985; Sankoff & Poplack 1981; Woolford 1983, among others).

The purpose of this paper is to study Japanese/English code-switching practiced by Japanese Canadians, focusing on the use of Japanese topics in their Japanese/English bilingual discourse. Japanese topics are syntactic items, but their occurrence and functions are discourse-related. Structural aspects of bilingual topic-comment sentences have been studied in Nishimura (1989); however, considering the discourse-related aspects of topics, it will be interesting to find out how Japanese topics are used in actual Japanese/English bilingual discourse. Previous studies of syntactic aspects of code-switching have examined code-switching from sentence grammar; this paper looks at it from a discourse perspective.

## The subjects

The three *Niseis* (the second generation Japanese)--Midori, Geoff and Sean--living in Toronto, Ontario, are the subjects of this study. Midori is a relative of mine; I visit Midori and her husband Geoff often. The subjects were all born in

Vancouver, B.C. in mid-1920. Like many other *Niseis* in Toronto, Geoff and Sean moved to the Toronto area after they were released from the internment camps in the interior of Canada where they were retained during the duration of the second world war (Makabe 1979). Midori moved to the area in the late 1960's when she got married to Geoff.

The Japanese do not reside in highly concentrated areas in Toronto (as they once did in Vancouver, Ujimoto 1974), but live all over the city. Despite their residential dispersion, the Japanese, especially the *Niseis,* still socialize as a group and have not lost their ethnic identity (Makabe 1979). Midori and Geoff often get together with Sean, and enjoy each other's company.

The *Niseis,* especially those who were born around the time when our informants were born, are bilingual in Japanese and English, and use both Japanese and English in their in-group interactions. From my observation (Nishimura 1992), our subjects use English mixing some Japanese, talking to each other. They code-switch as shown in this paper, when they talk to a mixed group of native Japanese and *Niseis* or whenever *kika-Niseis* ( Japan educated *Niseis* with limited proficiency in English) are present.

## Data

Data used for analysis in this paper are drawn from two natural conversations which took place in Midori and Geoff's apartment in downtown Toronto.[1] I was visiting them. In one conversation, Midori, Geoff, and I were chatting in their living room. The second conversation took place when Sean and his nephew (who moved to Canada recently) came to visit us. Both conversations were tape-recorded with the permission of everyone, and later transcribed by the author.

## Topics in Japanese

Before presenting our analysis, a brief explanation of Japanese topics is in order. Japanese possesses a topic marker '*wa*'. The use of '*wa*' needs to be understood in relation to regular case markers. When an NP appears on the first mention in Japanese discourse, it is marked by a case marker: '*ga*' for the nominative case, '*o*' for the accusative case, '*ni*' for the dative, etc. If NP is established as a topic after the first mention (that is, if the speaker wants to make a statement about it), it is marked by the particle '*wa*'. In spoken discourse (as opposed to written discourse), '*wa*' can be omitted. Furthermore, once NP is established as a topic, it can be omitted along with '*wa*' thereafter. When there is a topic shift and the earlier topic is reintroduced in the conversation, the reintroduction is accomplished by marking the topical NP by '*wa*.' Observe ( 2 ):

( 2 )

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| John | *ga* | *kono hon* | *o* | *kureta yo.* | John | *wa* | *boku no gakusei da yo.* |
| | subj. | this book | obj. | | | topic | |

*Nihongo o* *yatten da.* *Kono hon wa* *ima nihon de* besutoseraa *datte.*
Japanese obj. this book topic

*Omoshiroi* *rashii yo.* John *wa* *ii hon o kureta naa.*
interesting topic reintroduction

'John gave me this book. John is a student of mine. (He) is learning Japanese. This book is now a best seller in Japan. (It) is interesting, I hear. John gave me a nice book.'

The subject 'John' is marked by *'ga'*, and the object *'kono hon'* ('this book' )by *'o'*. 'John' is marked by '*wa'* in the second sentence; 'John' is a topic. In the third sentence, the topic (John) is omitted. In the fourth sentence, '*kono hon*' is marked by *'wa'*; *'kono hon'* is a new topic. In the sentence that follows, the topic is omitted. In the final sentence, 'John' is reintroduced as a topic again; it is marked by *wa.*

Analysis

I will first show that when the *Niseis* use both Japanese and English in conversation, they use Japanese topics both with Japanese comment sentences just like in monolingual Japanese conversation, and with English sentences. See ( 3 ):

( 3 ) Midori, Geoff, and the author are chatting.

1 Author: *De nihon ni soiu huu ni itta toki ni ne, ichiban omoidasu koto, ima*
When you went to Japan like that, is there anything you remember
2 *wasure nai koto tte aru?*
most, something you don't forget?
3 Midori: *Nihon no samui no.*
That it's so cold in Japan.
4 Author: Laughing (thinking about Japanese poor heating systems).
5 Midori: *Ano samusa wa* *wasureraren.* Laughing.
topic
That coldness, I can't forget.
6 Author: Geoff *-san wa doo desu ka*?
How about you, Geoff ?
Midori: (Answering for Geoff)
7 *Geoff wa* *nihon wa* it's only been twice *ka*?
As for Geoff, he's has been to Japan only twice, right ?
8 Geoff: Yeah, *me wa.*
Yeah, I've been there only twice.

In response to my question of whether there issomething they cannot forget about their trip to Japan at the time Japan was in a chaotic condition right after the war, Midori rather bluntly responds, saying that she cannot forget that it is so cold in Japan (line 3 ). I laugh because I exactly know what Midori means. After that,

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Midori restates what she just said, topicalizing the coldness in Japan: '*ano samusa wa*' 'that coldness', where '*samusa*' is a noun derived from an adjective '*samui*', 'cold'. This topic is followed by a Japanese comment sentence. In this topic-comment sentence, Midori is elaborating on the coldness in Japan--she can't forget it. I turn to Geoff, asking the same question (line 6). Midori answers for Geoff. In her answer, Midori uses '*wa*' twice, followed by an English sentence. The first one in 'Geoff *wa*' is a topical: Midori is talking about Geoff. The second one in '*nihon wa*' carries a 'contrastive' meaning-- Japan as opposed to other places. In the end, Geoff confirms what Midori has said about him by saying 'Yeah, me *wa*.'[2] Notice that this '*wa*' is topical: Geoff is talking about himself.

Let us move on to Japanese topics followed by English sentences. In (4), Midori and Geoff are telling the author what life was like in British Columbia when the Japanese first came to Canada:

(4) Geoff, Midori, and the author are chatting.

1 Geoff: *Demo, soshite,* Miwa, Vancouver *jida no seikatsu no,* I'm now talking
But Miwa, with respect to the life during the Vancouver days,
2 about something 1920 to 40, eh? In that era, if you lived in Powell
3 Street, you didn't have to have any contact with *hakujin* to get along,
Caucasians
4 because there was all kinds of Japanese stores that sold your clothing,
5 your food...you have a Japanese doctor. All your needs were met by
6 various peoples of Japanese origin.

7 Midori: Powell Street *wa,* we used to call it little Tokyo!
topic

Geoff mentions Powell Street (line 2), explaining the situation in Vancouver between 1920 and 1940. Midori has something to say about Powell Street; she makes Powell Street into a topic using '*wa*' (line 7). The topic is followed by an English comment sentence-- 'we used to call it little Tokyo'.

Speakers use topics to single out something in a discourse. By singling out, the speaker also constructs a contrast. Thus, a Japanese topic often implies a contrast. The *Niseis* also use '*wa*' to imply a contrast. In (5), Midori is explaining the heating condition of her apartment to everyone there--Sean, Sean's nephew, and the author:

(5) Geoff, Midori, the author, Sean, and his newphew are chatting.

1 Midori: *Hode,* they're cold. We're warm, eh?
And,
Me-*tachi,* winter-*chuu de mo,* window *aketearu desho?*
We keep the windows open even during the winter time, you know.
Sean: Uh-huh.
4 Midori: *Mae no hito-tachi wa ,* they shut all their windows.
People living in the front side,
Sean: Is that right?

Midori's apartment building is a high-rise located very close to Lake Ontario. It has a spectacular view of the lake if one lives on the side of the building facing the lake. Anybody that visits Midori's apartment including the author wonders how come Midori and her husband have not moved to that side. Midori often has to explain why they have chosen to stay on the side where they are now. This is the context in which the above discourse is taking place. Midori has just said that the wind from the lake hits the front side of the building during the winter, and that the manager of the apartment has to turn the heat all the way up to keep the people on the front side warm. Midori is now saying that because of this, Midori and her husband, who live on the other side of the building not facing the lake, are warm, and keep their windows open even during the winter. People on the front side, in contrast, have to keep all their windows shut. Notice the use of *'wa'* with the NP referring to 'people on the front side' (line 4).

We will turn to a longer stretch of disourse in order to see the *Niseis* use *' wa'* to indicate the reintroduction of a topic. In ( 6 ), Geoff reintroduces an earlier topic into the conversation (line17). In order to see how Geoff does this, it is necessary to examine how that topic was initially introduced and then dropped in the conversation, before it was reintroduced.

Earlier, everyone was talking about British Columbia: how much B.C. has to offer the Japanese palate. Midori stepped out to the kitchen for a moment, and returned to the living room. As soon as she returned to the living room, she said that in British Columbia, roasted seaweed is delicious (line 1). At this point, British Columbia is still the topic. Midori, however, does not delete the topic NP, B.C., (line 1), because she wants to make the topic explicit, having been absent from the conversation for a short while.

( 6 ) Geoff, Midori, the author, Sean, and Masa are chatting. Midori returns to the living room.

1 Midori: *Hode, ano,* B.C., *nori o yaite taberu. Oishiidesho!*
And er, in B.C., (we) roast seaweed, and eat (it). (It's) delicious!
Author: *Nori o tsukuru no?*
Do they cultivate seaweed?
Midori: Uh-huh. *Nori, toreru mono,* Vancouver.
They can get seaweed in Vancouver.
Author: *Hee.*
Oh, yes?
5 Midori: *Nihonjin ga minna hoshite, kono kurai no* square *ni kosaete, sore o*
The Japanese dry (it), make (it) into squares about this size, and we
*morau no.*
get them.
Sean: *Demo, honto dattara, torenain desho?*
But (they) are not supposed to be able to collect (it), right?
*Honto dattara.*
Not supposed to.
Midori: I don't know. I think they can. (pause) It's *ano,*.... What's that?
er

10 What's that? Fish eggs they can't take.
Sean: Oh!
Midori: Japanese can't get fish eggs.
Geoff: Oh. That grows *ano..*
er
Midori: What do you call that? *Kazunoko?*
Herring roe
15 Author: *Kazunoko.*
Herring roe
Midori: *Kazunoko.* *Are, nihonjin wa toren no.*
Herring roe That, Japanese can't collect it.
Author: *Toreru no?*
Can they collect (it)?
Midori: *Un.* They can't.
Right.
Geoff: *Anoo...* *Nori wa ,* it grows right on the rocks, eh?
Well... Seaweed,
20 Sean: Yeah.
Geoff: When tide's up, you can walk around...
Midori: Yeah. *Unto aratte, aratte,* 'cause sea shell *ga ippai haitteru kara yo.*
They wash (it) a lot, 'cause sea shells are mixed in, you know.
It takes a lot of time and work.
Author: *Dakara takai n da.*
That's why (it's) expensive.
25 Midori: *Sore dakara, moratte mo, yappari dooshitemo haitteru yo,* sometimes.
That's why when we get (it), shells are sometimes all mixed in.

Notice the use of the accusative marker *'o'* with the seaweed by Midori (line 1); it marks the first mention of seaweed. At that time, I had no idea that the Japanese in B.C. have access to this Japanese delicacy; hence I ask whether the Japanese in B.C. cultivate seaweed (line 2). In asking this question, I used the accusative marker *'o'*, instead of *'wa'* in spite of the second mention of seaweed in the discourse; this is because I wanted to ask whether the Japanese in B.C. cultivate seaweed, as opposed to whether seaweed grows naturally in B.C. In other words, my question was not about seaweed itself, but it was about whether the Japanese in B.C. cultivate it. The Japanese verb *' tsukuru'*, which I used, is roughly similar to English 'to cultivate as a food crop'; it is not used for something growing naturally, only for something someone has planted for the purpose of eating. Midori responds with 'Uh-huh', and goes on to state, in Japanese, that they can get seaweed that grows naturally in Vancouver; she used the verb *'toreru'* which means 'to grow naturally'. In this statement, Midori sounds contradictory, because she is saying 'uh-huh' in answer to my question (whether the Japanese cultivate seaweed to eat), and immediately after that, she informs me that seaweed grows naturally in B.C. It is not clear whether Midori knows the meaning of *'tsukuru'* here. Regardless, seaweed is now established as a topic; Midori describes how the Japanese in B.C. prepare it ( line 5). Notice the deletion of the NP 'seaweed' and the topic-marker throughout in Midori's sentences (line 5) and in Sean's question (line 6).

Next comes a topic shift (line 10) from seaweed to fish eggs. This topic shift is not intentionally initiated by anyone, but happens accidentally. Sean mistakingly believes that one is prohibited from collecting seaweed (line 7). Midori suddenly realizes that what Sean is thinking about is not seaweed but fish eggs (line 10); this is the first mention of fish eggs in the conversation, but this mention is not addressed to the interlocutor(s) but to the speaker herself. Midori makes fish eggs a topic (line 12) when she says, 'Japanese can't get fish eggs.' After this topic shift has occurred, Geoff starts to say (line 13), 'That grows on...', where 'that' refers to seaweed. He is ignored by everyone else, because seaweed is no longer the topic of the conversation.

Midori (line 14) tries to remember what this kind of fish eggs are called in Japanese. It occurs to her immediately that they are called *kazunoko* ('herring roe'). After Midori confirms with me that that is the right name, she states (in Japanese-line 16) that the Japanese cannot collect them. Notice in this Japanese utterance that the pronoun *'are'*, referring to herring roe, is used without any marker, and that *'nihonjin'*, referring to the Japanese people in British Columbia, is marked by *'wa'*. This *'wa'*, marking *'nihonjin'*, is contrastive, because the topic is now herring roe ( *'wa'* is omitted).[3] What Midori meant here is something like this: Herring roe, which we are talking about, Japanese cannot collect it, as opposed to some other group of people who can. I fail to understand what she meant here; I do not understand why she makes a contrast between the Japanese and someone else; I also wonder how it is possible for the Japanese in B.C. to eat something that they are not allowed to get. I simply ask whether the Japanese can collect herring roe (line 17). Midori responds that they can't (line 17). I still do not understand what Midori is talking about, but I do not pursue this matter any further.

This background information is necessary in order to understand what Midori was talking about above.[4] Herring roe is a special delicacy that Japanese people eat during New Year holidays; it is extremely expensive in Japan. But in British Columbia, it is easy to get and many Canadians even do not eat it. I am sure that the Japanese in B.C. are dying to eat it. However, by law, only the population indigenous to Canada are allowed to catch herrings; the Japanese are not allowed to catch them.

Finally, Geoff manages to say what he wanted to say about seaweed (line 19). Because seaweed has not been the topic among other participants for a while, Geoff has to bring it in by using the NP marked with *'wa'* ( *'Nori wa'*), which is the method of reintroducing an already-dropped topic into conversation in Japanese. This topic is followed by an English comment sentence-- *'Nori-wa*, it grows right on the rocks, eh?' Once seaweed is reestablished as the topic of discourse, the NP which refers to it may be deleted in Japanese sentences: hence Midori and the author omit it (lines 22 -25) throughout when they talk about it responding to Geoff's statement.

## Conclusion

We have examined how bilingual Niseis *use* Japanese topics (items marked by a Japanese topic marker '*wa*') with English sentences in Japanese/English bilingual discourse. These Japanese topics perform the functions which Japanese topics normally perform in ordinary monolingual Japanese speech. They indicate topichood and contrast, and reintroduce a once-dropped topic again into the conversation.

Using a Japanese topic is syntactically simple: one places what one wants to talk

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about at the sentence-initial position, and then says whatever one has to say about it. It is an easy site for code-switching. However, I want to make it clear that the use of '*wa*' in the *Niseis'* speech is not a frozen expression often found in interlanguage. Nor it is like a strategy which many learners of second language learn to use to facilitate their communication. The *Niseis* use '*wa*' in a productive manner.[5] The *Niseis* use it just like native Japanese speakers use it. The *Niseis* use it for topic organization (establishment, contrast, and reintroduction) as the on-going conversation progresses.

## NOTES

1. Data presented in (4), (5), and (6) appear in Nishimura (1994).
2. The *Niseis* often use '*me*' to refer to themselves.
3. As Kuno (1973) observes, when there is more than one occurrence of '*wa*' in a sentence(including omitted '*wa*'), only the first one can be a topic; all the others are contrastive.
4. At that time, I wondered why she contrasted the Japanese to some other groups; I did not know that only native Canadians were allowed to get herring roe in B.C. After I transcribed the data, I had to ask Midori what she meant by this statement.
5. There is no confusion between '*wa*' and '*ga*', for instance, which are characteristics of many learners of Japanese. A parallel use of '*wa*' has been found among the Niseis in San Francisco (Nishimura 1985) and in Salt Lake City (Azuma 1991). These facts strongly support the argument that Japanese topics are productive entities in the Niseis bilingual speech.

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# ON THE PROPERTIES OF CHINESE MODAL VERBS

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**1. Introduction**. Unlike English modal verbs which have received considerable attention from linguists (Anderson 1971; Ehrman 1966; Halliday 1970; Huddleston 1974; Jenkins 1972; Johannesson 1976; Lakoff 1972; Marino 1973; Palmer 1977, 1979, 1983, 1986, 1990; Quirk et al. 1972, 1985; Searle 1983), Chinese modal verbs have generally been dealt with in a simplistic manner. In their book *Mandarin Chinese: A Functional Reference Grammar* (1981), Li and Thompson identify six properties which distinguish Chinese modal verbs from other verbs.[1] Their discussion on the properties of Chinese modal verbs seems to explore this area more thoroughly than was done previously (Alleton 1977; Chao 1968; Teng 1975). However, several of the properties prove not appropriate when applied to each of the sixteen modal verbs Li and Thompson offer.

This paper intends, first, to examine the appropriateness of these properties. Then it suggests four grammatical constraints with stricter selectional restrictions, making the differentiation of Chinese modal verbs from other verbs more accurate and efficient. Finally, it offers a list of Chinese modal verbs which follow these grammatical constraints without exception. The result of the study also indicates that the properties of Chinese modal verbs and verbs can become fuzzy to some degree in certain environments.

**2. Modal verbs offered by Li and Thompson**. Before examining and discussing the properties of Chinese modal verbs as described by Li and Thompson (1981:173-4), it is necessary to cite all the Chinese modal verbs they have identified. Through application of the six properties to verbs in Mandarin Chinese, Li and Thompson (1981:182-3) have identified the following sixteen modal verbs:

| | |
|---|---|
| *yīnggāi, yīngdāng, gāi* | 'ought to, should' |
| *néng, nénggòu, huì, kěyi* | 'be able to' |
| *néng, kěyi* | 'has permission to' |
| *gǎn* | 'dare' |
| *kěn* | 'be willing to' |
| *děi, bìxū, bìyào, bìděi* | 'must, ought to' |
| *huì* | 'will, know how' |

**3. Properties defined by Li and Thompson.** The six properties postulated by Li and Thompson (1981:173-174) by which to differentiate Chinese modal verbs from other verbs are cited as follows. The examples are from their original discussion.

*(i) A modal verb must co-occur with a verb (or an 'understood' verb). For example, (1) is incomplete and can be used only in a context in which a verb representing what s/he can do is understood.*

(1) tā *néng*
3sg can

S/He can.

*(ii) A modal verb does not take aspect markers.*

(2) *tā *néng* -le chàng-gē
-guo
-zhe
3sg can -PFV sing-song
-EXP
-DUR

*(iii) A modal verb cannot be modified by intensifiers, such as hěn 'very' or gèng 'even more'.*

(3) tā * *hěn* néng chàng-gē
*gèng*
3sg very can sing-song
even:more

*(iv) A modal verb cannot be nominalized.*

(4) *tā *shì* *néng* de
3sg be can NOM

*(v) A modal verb cannot occur before the subject.*

(5) **néng* tā chàng-gē
can 3sg sing-song

*(vi) A modal verb cannot take a direct object.*

(6) *tā *néng* nèi-jian shì
3sg can that-CL job

**4. Examination of the six properties.** This section examines the properties defined by Li and Thompson. Where possible, the modal verbs from the original examples are used in the following discussion. Where the modal verbs from the original are not appropriate to the discussion of the six properties, other modal verbs are given.

**4.1. First Property**. The first property, that a modal verb must co-occur with a verb, is valid, but the example they give can only occur when both interlocutors know the old information concerning what action *S/He can* refers to. Without the old information in a given environment, a modal verb cannot occur alone.

**4.2. Second Property**. The second property, that a modal verb does not take aspect markers, is appropriate in (2). The example is ungrammatical since the aspect markers, *-le*, used as a perfect aspect marker, *-guo*, used as an experiential aspect marker, and *-zhe*, used as a durative aspect marker, are inserted between the modal verb *néng* 'can' and the verb *chàng-ge* 'sing song'.

However, according to the first property, when both interlocutors share old information concerning what the person can do, *tā néng* 'S/He can' may be used alone without the verb. Then a modal verb can take aspect markers such as *-le* and *-guo* when the verb is absent. Look at examples (7) and (8):

| | | | | | | |
|---|---|---|---|---|---|---|
| (7) | tā | yuánlái | bù | *néng* | dúlì | cāozùo, |
| | 3sg | before | not | can | independent | operate |

| | | |
|---|---|---|
| | xiànjài | *néng-le*. |
| | now | can-PFV |

S/He could not operate the machine by herself/himself before. Now s/he can.

| | | | | | |
|---|---|---|---|---|---|
| (8) | zhèi-zhǒng | yǎnsuàn | fāngshì | wǒ | yǐqiān |
| | this-CL | calculation | method | I | before |

| | | | | |
|---|---|---|---|---|
| | *huì-guo*, | xiànzài | quán | wàng-le. |
| | know how-EXP | now | all | forget-PFV |

(Meng et al. 1987:346)

I knew how to use this calculation method before, but I have forgotten it completely now.

The evidence in example (7) and (8) suggests that the second property is at least incomplete, if not appropriate, since Chinese modal verbs can take aspect markers in certain environments, as above.

**4.3. Third Property.** The third property, that a modal verb cannot be modified by intensifiers, such as *hěn* 'very' or *gèng* 'even more', is invalid for a number of modal verbs identified by Li and Thompson (1981:182-183). Huang and Liao (1988:337) mention that Mandarin Chinese modal verbs can be modified by adverbs of degree, such as *hěn yīnggāi*. Look at the following examples:

| | | | | | |
|---|---|---|---|---|---|
| (9) | tā | *hěn* | *néng* | tuánjié | rén (Meng et al. 1987: 510). |
| | 3sg | very | can | unite | people |

S/He is good at uniting people.

| | | | | | |
|---|---|---|---|---|---|
| (10) | tā | *hěn* | *huì* | fèngchēng | rēn. |
| | 3sg | very | know how | flatter | people |

S/He really knows how to flatter people.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (11) | rúguó | nǐ | néng | qù, | wǒ | *gèng* | *néng* | *qù*. |
| | if | you | can | go | I | even:more | can | go |

If you can go, I am more able to go.

The following modal verbs proposed by Li and Thompson (1981) can also be modified by either or both of *hěn* 'very' and *gèng* 'even more': *yīnggāi, yīngdāng, gāi*, 'ought to, should'; *nénggòu, huì, kěyi* 'be able to'; *néng, kěyi* 'has permission to'; *bìxū, bìyào, děi* 'must, ought to'; *huì* 'will, know how'; *gǎn* 'dare'; and *kěn* 'be wiling to'.

According to Quirk et al. (1973:214), intensifiers in English can be classified into three different groups: emphasizers, such as *definitely*, amplifiers, such as *quite* and downtoners, such as *somewhat*. Furthermore, amplifiers consist of maximizers, such as *completely*, and boosters, such as *very much*; and downtoners are divided into compromisers, such as *kind of*, diminishers, such as *partly*, minimizers, such as *hardly*, and approximators, such as *almost*. Like English, Mandarin Chinese also has these categories of intensifiers. The two intensifiers given by Li and Thompson (1981:173) *hěn* 'very' and *gèng* 'even more' are boosters, a subcategory of amplifiers.

Since Li and Thompson (1981) did not discuss other intensifiers with respect to Chinese modal verbs, it would be enlightening to examine whether they can be modified by other types of intensifiers. Look at the following examples:

| | | | | |
|---|---|---|---|---|
| (12) | tā | *kěndìng* | *nénggòu* | shèngrèn |
| | 3sg | definitely-Emphasizer | be able to | competent |

zhèi-ge guōngzuò.
this-CL job

S/He is definitely competent for this job.

(13) tā *juéduì* *yīngāi* ànshí
3sg absolutely-Maximizer should on time

jiāo zuòyiè.
hand in assignment

S/He should definitely hand in the assignment on time.

(14) tā *jí* *néng* chī-kǔ.
3sg greatly-Booster be able to eat-bitterness

S/He can bear a great deal of hardship.

(15) nǐ *xiāngdāng* *huì* piàn rén.
you rather-Compromiser know how cheat people

You are rather good at cheating people.

(16) tā *yóudiǎn* *néng* chī-kǔ.
3sg somewhat-Diminisher be able to eat-bitterness

S/He can bear hardship somewhat.

(17) tā *yìdiǎn* *dōu* *bù* *néng* chī-kǔ.
3sg little-Minimizer all not be able to eat-bitterness

S/He can hardly bear any hardship.

(18) tā *jīhū* *huì* kāi chē-le.
3sg almost-Approximator know how drive vehicle-CRS

S/He almost knows how to drive a car.

It can be seen from examples (12)-(18) that Chinese modal verbs can be modified by intensifiers of emphasizers, amplifiers and downtoners, thus the third property proposed by Li and Thompson (1981) cannot describe Chinese modal verbs accurately. Indeed, emphasizers, such as *jíqí* 'extremely', and amplifiers, such as *quèshí* 'entirely', *tèbié* 'very much' and *shífēn* 'very much' can be commonly observed to modify a number of Chinese modal verbs defined by Li and Thompson (1981), such as *yīnggāi, yīngdāng, gāi* 'ought to, should', *huì* 'will, know how', *néng, nénggoù, huì, kěyi* 'be able to', *néng, kěyi* 'has permission to', *gǎn* 'dare', *kěn* 'be willing to', *děi, bìxū, bìyào* 'must, ought to'.

**4.4. Fourth Property**. Li and Thompson (1981:173) state that a modal verb cannot be nominalized. Although this property seems to be demonstrated well by *néng* 'be able to' in their example (4), counterevidence exists. *Bìyào*, 'must, ought to', a modal verb listed by Li and Thompson (1981), is nominalized in example (19), and it is acceptable. Thus, it seems that this property cannot govern all the modal verbs Li and Thompson (1981) have proposed.

(19) zhèi-ge shǒuxù *shì* *bìyào* *de*
this-CL procedure be must NOM

This procedure is necessary.

**4.5. Fifth Property**. The fifth property, that a modal verb cannot occur before the subject in a sentence, is invalid for the following examples, which are acceptable and are commonly used:

(20) *yīnggāi* nǐ zuòfàn.
should you cook

You should cook.

(21) *gāi* nǐ zóu-le.
should you walk-PFV
It is your turn (playing chess).

(22) *bìxū* tā qù cái xíng.
must 3sg go only:then all right

It must be s/he who goes there.

Although the word order of the modal verb and the subject in (20)-(22) can be inverted, as in (23)-(25), the focus of the sentence changes, as does the sentence's meaning.

(23) nǐ *yīnggāi* zuòfàn.
you should cook

You should cook.

| | | | | | |
|---|---|---|---|---|---|
| (24) | nǐ | *gāi* | zǒu-le. | | |
| | you | should | walk-PFV | | |

You should leave.

| | | | | | |
|---|---|---|---|---|---|
| (25) | tā | *bìxū* | qù | cái | xíng. |
| | 3sg | must | go | only:then | all right |

S/He must go.

The focus of (20) is on the subject, *you*, meaning that it is *you* who should cook, not someone else. The focus of (23), however, is on the obligation of cooking, implying that carrying out *your responsibility* for cooking is expected.

(21) is always used in playing games, such as chess and cards, in which turns are taken. The focus of this sentence is on *you* who should take the turn. Example (24), normally not used for a game, simply means that *you should leave now*, implying that it is inappropriate if you do not leave. The focus is on the *appropriateness of your leaving*.

(22) focuses on *s/he*, a particular person in the speaker's mind, not someone else. This sentence may imply that the situation is serious, and only that particular person can solve the problem there. (25), however, focuses on the *appropriateness of his or her going*.

Since these sentences have different meanings when the modal verbs and subjects are switched, it is apparent that they are not the same sentences with different surface grammatical structures. In addition to the modal verbs in examples (20)-(22), *yīngdāng* 'ought to, should' and *děi* 'must, ought to' can be used in the same manner.

**4.6. Sixth Property**. The sixth property, which states that a modal verb cannot take a direct object, is appropriate and valid in most cases. However, in a situation where the degree of modality of some modal verbs diminishes and their degree of verbness increases, they may sometimes take a direct object. Look at the examples below:

| | | | | | | |
|---|---|---|---|---|---|---|
| (26) | zhèxiē | huó | *děi* | èrshi | rén | (Meng et al. 1987: 182). |
| | these | work | must | twenty | people | |

These jobs call for twenty people.

| | | | | | | |
|---|---|---|---|---|---|---|
| (27) | bá-yá | *děi* | Liú | dàifu | cái | xíng |
| | extract-tooth | must | Liu | doctor | only:then | competent |

(Meng et al. 1987: 182).

Tooth extraction can only be done by Dr. Liu.

It seems that in the cases of (26) and (27), *dĕi* shows a stronger degree of verbness than other modal verbs, such as *néng* 'be able to', as in (28):

| | | | | | |
|---|---|---|---|---|---|
| (28)* | zhèxīe | huó | *néng* | èrshi | rén |
| | these | work | can | twenty | people |

One may argue that the underlying form of (26) includes the verb *yào* 'need' which follows *dĕi*, but is deleted. However, the fact that *dĕi* can remain without the verb while *néng* in (28) cannot shows that *dĕi* is different semantically from other modal verbs with respect to verbness. The above examples suggest that when a modal verb, such as *dĕi*, possesses the properties of a verb to a large degree, the distinction between modal verbs and verbs becomes fuzzy.

After examining the six properties offered by Li and Thompson (1981:173-4), it can be seen that there is counterevidence to most of these properties with regard to modal verbs, and that these properties are not adequate to differentiate Chinese modal verbs from other verbs.

**5. Four Grammatical Constraints.** As can be seen, defining Chinese modal verbs is not easy, and it is more difficult to propose a single rule that can define all modal verbs adequately and can also govern all the modal verbs. This study proposes four grammatical constraints which seem to be more consistent and efficient for the purpose of separating Chinese modal verbs from other verbs. These grammatical constraints include the morphological process of reduplication; the use of imperative devices; and the word order of modal verbs when the adverb *zài* 'again' and grammatical constructions *bă* and *bèi* are used with modal verbs.

**5.1. Reduplication.** Most Chinese verbs can be reduplicated, while modal verbs cannot undergo this process. Look at examples (29) and (30):

| | | | | |
|---|---|---|---|---|
| (29) | tā | *néng* | *dă* | lánqiú. |
| | 3sg | can | play | basketball |

S/He can play basketball.

| | | | | |
|---|---|---|---|---|
| (30) | tā | *qù* | *dă* | lánqiú. |
| | 3sg | go | play | basketball |

S/He will go and play basketball.

Both (29) and (30) have two verbs juxtaposed; however, *néng* 'be able to' in the verbal juxtaposition of (29) cannot be reduplicated to ***néngnéng** while *dǎ* 'play' can, such as *dáda*. So *néng* is a candidate for modal verb, but *dǎ* is not. Since both constituents in the verbal juxtaposition of (30) can be reduplicated as *qùqu* and *dáda*, they cannot be candidates for modal verbs.

**5.2. Imperative Devices.** Other Chinese verbs, such as the resultative verb compound, *tiàoguòqù* 'jump across', however, cannot be reduplicated. In this case, we need to resort to the second grammatical constraint, imperative devices, which can help in differentiation whether a modal verb or a non-reduplicated resultative verb compound is juxtaposed with a verb. Although a resultative verb compound cannot be reduplicated, it can be modified by both imperative *qǐng* 'please' and negative imperatives *búbì*, 'don't need', *búyòng*, 'don't need', *bié* 'don't', such as *dǎ-kāi* 'open' in (31) and *tiào-gùo-qù* 'jump across' in (33). However, a modal verb can neither be modified by imperative *qǐng* nor by negative imperatives, such as *néng* in (32) and (34).

| | | | | |
|---|---|---|---|---|
| (31) | *qǐng* | *dǎ-kāi* | *jiǎnchá* | yí-biàn. |
| | please | hit-open | examine | one-CL |

Please open and examine it.

| | | | | | |
|---|---|---|---|---|---|
| (32)* | *qǐng* | *néng* | *dá-kāi* | *jiǎnchá* | yí-biàn. |
| | please | can | hit-open | examine | one-CL |

| | | | | | |
|---|---|---|---|---|---|
| (33) | tā | *búyòng* | *tiào-guò-qù* | *jiòu* | rén. |
| | 3sg | not necessary | jump-cross-go | save | people |

S/He didn't need to jump across to rescue people.

| | | | | | | |
|---|---|---|---|---|---|---|
| (34)* | tā | *búyòng* | *néng* | *tiào-guò-qù* | *jiòu* | rén. |
| | 3sg | not necessary | can | jump-cross-go | save | people |

**5.3. Adverb *zài* 'again'.** When a candidate for modal verbs occurs with a verb modified by the adverb *zài* 'again' in a declarative sentence, the modal verb must precede the verb, and the verb must follow *zài*, as in (35) and (37). When the verb precedes *zài*, as in (36) and (38), the sentences become ungrammatical.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| (35) | nǐ | *kěn* | *zài* | *jiāo* | wǒ | yí-cì | ma? |
| | you | be willing to | again | teach | I | one-CL | Q |

Will you teach me one more time?

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| (36)* | nǐ | *kěn* | *jiāo* | *zài* | wǒ | yí-cì | ma? |
| | you | be willing to | teach | again | I | one-CL | Q |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| (37) | nǐ | *zài* | *gǎn* | *shuō* | yí | jù | wǒ | jiòu | bú |
| | you | again | dare | speak | one | sentence | I | then | not |

| |
|---|
| kèqì-le. |
| polite-PFV |

If you dare to say another sentence, I will no longer be polite.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (38)* | nǐ | *zài* | *shuō* | *gǎn* | yí | jù | wǒ | jiòu |
| | you | again | speak | dare | one | sentence | I | then |

| | |
|---|---|
| bú | kèqì-le |
| not | polite-PFV |

However, a verb or a verbal compound may also precede another verb which follows *zài* , as in (39) and (40).

| | | | | | |
|---|---|---|---|---|---|
| (39) | wǒ | *qù* | *zài* | *kàn* | yí-biàn. |
| | I | go | again | look | one-CL |

I will go and see it again.

| | | | | | |
|---|---|---|---|---|---|
| (40) | nǐ | *dǎ-kāi* | *zài* | *jiǎnchá* | yí-biàn. |
| | you | hit-open | again | examine | one-CL |

You open (it) and examine it again.

In order to identify a modal verb in this situation, the candidate preceding another verb when *zài* 'again' is used can be tested by the use of reduplication, and the imperative devices. If the candidate can be reduplicated, or can be modified by the imperative devices, it is not a modal verb. Since *qù* 'go' can be reduplicated as in *qùqu*, and *dǎkāi* 'open' can be modified by the imperative *qǐng* 'please' as in *qíngdǎkāi* 'please open', they are verbs instead of modal verbs even though they precede another verb following *zài* in (39) and (40).

**5.4. *Bǎ*-Construction and *Bèi*-Construction**. A *bǎ*-construction is used for emphasizing how something is disposed of and what result is brought about by disposing of it. *Bǎ*- itself does not have any particular semantic meaning in this construction. The main function of the *bèi*-construction is to express passivity. The semantic meaning of *bèi*- is that an action is done by an agent.

When a modal verb is used with these two constructions, it usually precedes *bǎ-* and *bèi-* while the verb always follows *bǎ-* and *bèi-*, as in (41) and (43). Sometimes a modal verb may occur after *bǎ-* and *bèi-*, but it always precedes the verb, as in (45). When this word order does not follow, the sentence becomes ungrammatical, as in (42), (44), and (46).

(41) wǒ *néng* *bǎ* jùzi xiě duǎn dian.
I can BA sentence write short a little

I can shorten the sentences a little.

(42)* wǒ *bǎ* *néng* jùzi xiě duǎn dian
I BA can sentence write short a little

(43) nǐ zuò cuò shì-le. *yīnggāi* *bèi* tā *mà*
you do wrong thing-PFV should BEI 3sg scold

yí-dùn.
one-CL

You have done something wrong, so you should be scolded by him/her.

(44)* nǐ *bèi* *yīnggāi* tā mà yí-dùn
you BEI should 3sg scold one-CL

(45) wǒ *bǎ* tā *néng* *kàn-wán.*
I BA 3sg can look-finish

I can finish reading it.

(46)* wǒ *bǎ* tā *kàn-wán* *néng*
I BA 3sg look-finish can

**6. Chinese Modal Verbs.** According to these grammatical constraints, the following modal verbs are proposed. Since a few modal verbs already possess verbal qualities to a large degree, they may behave, not surprisingly, quite differently from other modal verbs, and it may be sometimes difficult to determine whether they function as modal verbs or as verbs. Thus, some of the modal verbs proposed here may be regarded as verbs by other linguists. For example, *yào* 'will, should, be willing to' in the following list has been regarded as a verb by some linguists (e.g. Li and Thompson 1981) and as a modal verb by others (e.g Huang and Liao 1988). The application of the above grammatical constraints shows that both claims are right, since the verb *yào* 'want' has a homonym which is a modal verb meaning 'will, should, be willing to'. For example, *yào* in (47) can be modified by imperative *qing* 'please', thus it is a verb. Meanwhile *yào* in (48) cannot be modified, so it should be a modal verb.

(47) *qǐng* *yào* èr-shí-ge bāozi.
please want two-ten-CL dumplings

Please get twenty dumplings.

(48) *(wǒ)* *yào* *chī* èr-shí-ge bāozi.
I will eat two-ten-CL dumplings

Thus, as long as the candidates for modal verbs follow the grammatical constraints discussed above, they are to be considered modal verbs in that particular environment.

| | |
|---|---|
| *néng, néngguò, huì, kěyi* | 'be able to' |
| *kě, kěyi, néng* | 'has permission to' |
| *kěnéng* | 'maybe' |
| *gāi, yīnggāi, yīngdāng* | 'should, ought to |
| *kěn, yuàn, yuànyì* | 'be willing to' |
| *gǎn* | 'dare' |
| *yào* | 'will, should, be willing to' |
| *děi, bìxū* | 'must, ought to' |
| *huì* | 'will, know how' |

Finally, we may propose that when a verb cannot be reduplicated nor modified by imperative devices, but can precede *bǎ*- and *bèi*-constructions, as well as precede another verb when the adverb *zài* is used, it should be a modal verb.

## Notes

[1] Li and Thompson use the term *auxiliary verbs* in their discussion.

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# ANOTHER VIEW OF EARLY BILINGUAL SPEECH

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## INTRODUCTION

Studies investigating the simultaneous acquisition of two languages from birth often debate whether the child learning two languages has one or two language systems at the beginning of speech. Some studies claim that bilingual children go through an initial stage where they combine the two languages into one unified system which is then gradually differentiated (Leopold 1949; Volterra & Taeschner 1978; Redlinger & Park 1980; Taeschner 1983). Others believe that bilingual children are able to keep both languages separate from the onset of speech (Ronjat 1913; Padilla & Liebman 1975; Lindholm & Padilla 1978; Genesee 1989).

An influential article supporting the one-language system hypothesis is that by Volterra and Taeschner (1978). They propose that in the first stage of development, bilingual children have words from both languages but almost no translation equivalents. In a later expansion of that paper, Taeschner (1983) states clearly that there are no equivalents in this stage. Only in a second stage about 6 months later, according to Taeschner (1983: 29), will young bilinguals develop the ability to generalize and to accept equivalent terms for one object or event. However, they will still apply the same syntactic rules to the two languages (cf. Meisel 1989 for more on the syntactic aspect of bilingual development). Finally, in a third stage, both lexicon and syntax are differentiated. Basically, this three-stage model shows that bilingual children start out initially with a single undifferentiated language system.

Proponents of the two-system hypothesis, however, claim that each language will develop independently of the other and reflect the acquisition of that language by monolingual children. In other words, in early language acquisition bilingual children should have two lexicons in their mind which resemble the lexicons of two separate children and each should operate independently of the other.

Whether one or two systems are being argued for, a child is not considered bilingual until he uses differentiated language. In much of the literature on bilingual development, there seems to be inappropriate and inconsistent usage of the term "mixing". If a child starts out with one system, we cannot discuss "mixing" as this would imply that two separate systems are involved. Yet, those advocating a unitary system refer to the bilingual child's "mixed" stage and claim moreover that language "mixing" is a sign of a unitary system. The term "mix" or "mixing" will be used in this paper only to mean that elements from two languages are used in the same speech event and will apply to one-word utterances from two languages as well as to multi-word utterances. Those arguing for two systems counter with reasons for why language mixing occurs in the first place. They explain that mixing is caused by code-switching patterns in the bilingual community or by the linguistic input in the environment rather than by the child's inability to keep the two languages separated (Bergman 1976; Lindholm 1980). It has also been suggested that children "mix" because they lack translation equivalents (Oksaar 1971; Genesee

1989).

Conclusive evidence has not yet been provided for either hypothesis. According to Volterra and Taeschner (1978), empirical evidence for a single lexical system would be provided if it is shown that young bilinguals have no translation equivalents in the first few months of speech. Evidence against a single lexical system and therefore evidence for two lexical systems would then be presented if equivalents are found in bilingual children's early vocabulary. As mentioned earlier, language mixing is often also used as evidence of the one-language system hypothesis. Genesee (1989) has argued, however, that there is no empirical basis in studies interpreting language mixing as support for the one-language system hypothesis because in general data from such studies have not been collected in two different language contexts. Only by doing so, is it possible to see whether there is "differential distribution of items from the two languages as a function of the predominant language being used in different contexts" (Genesee 1989: 165). If we find that lexical items from the two languages are used indiscriminately without regard to language context, this would support the one system hypothesis. On the other hand, if we find that lexical items from the two languages are used in contextually-sensitive ways, then the two-language systems hypothesis could be upheld. While I agree with Genesee (1989) about the need to examine language use in two separate language contexts (which those advocating the one system hypothesis have not done), I would add that we still need to look at the availability of equivalents in early lexical development. Since a lack of equivalents is often used to explain language mixing by those like Genesee (1989) who argue for two systems, empirical evidence for two systems should take into account the availability of equivalents. After all, only when equivalents are available will children have a choice in language use. Yet, although lexical gaps have been acknowledged as a reason for language mixing, most studies still do not examine the lexical resources available to bilingual children, or do not have the data to do so, when they make inferences about language differentiation based on language choice. As far as I am aware, no study has looked at language choice from the onset of speech at the one-word stage in two contexts based on the knowledge that choice is available (cf. Quay 1993b). Given this methodological shortcoming, interpretations of results as supporting the one- or the two-system hypothesis must be viewed with caution.

A case study of a child acquiring English and Spanish simultaneously from birth will be used: (1) to examine the production of equivalents as described by Volterra and Taeschner (1978), and (2) to investigate the use of equivalent terms in two different language contexts from the time such equivalents are produced to age 1;10 (year;month.day). By doing so, I hope to shed light on the debate over one or two systems in infant bilingualism.

## METHOD

My bilingual subject, Manuela, was an only child during the period with which this study deals. She lived in Brighton, England with her Cuban father and English mother. Manuela's father is a civil engineer, and her mother is a linguist and an academic at a British university. The child was exposed to Spanish from birth from her father, a native Cuban Spanish speaker, who had acquired English as a second language in secondary school. Manuela's mother is a native British English speaker who had acquired Spanish in adulthood, and from the time of their marriage four years before Manuela's birth, the parents spoke Spanish with one another. Manuela was exposed to Spanish in the home from her parents when no monolingual English speakers were present, and to English from her maternal grandmother and in the nursery where she went daily. During the period described in this study, Manuela received equal input from English and Spanish speakers.

The data reported in this study come from weekly video recordings - one session with a Spanish-speaking adult interlocutor and another with an English-speaking one - and from daily diary records kept by Manuela's mother. The recordings selected for use in this study are the earliest tapes available until age 1;10, although data were collected from ages 1;3 to 3;3 by Margaret Deuchar for another project (ESRC ref. no. C00232393; cf. Deuchar 1989) on the voicing systems in infant bilingualism (Deuchar & Clark 1987). The original plan was to make two half-hour recordings each week - one when Manuela was interacting with a Spanish-speaking adult interlocutor (henceforth, interaction with a Spanish-speaking interlocutor will be considered as a Spanish context) and one when she was with an English-speaking one (likewise, considered an English context). However, in striving to keep the sessions as natural as possible, the duration of recordings is irregular with longer sessions possible only as the child grew older.

In the video sessions, toys and books are used to stimulate activity and conversation. The main activities during these sessions consisted of Manuela playing with her toys or looking at her books with her interlocutor(s). Since the same toys and books were used in all sessions, a type of controlled situation was inadvertently created whereby we could see by keeping records whether the child truly possessed vocabulary in both languages to name or talk about the same toys and the same books.

Daily diary records of Manuela's linguistic development were kept by her mother who was the only observer and recorder of such data. Because they were kept daily, the diary notes served as an important source for the first appearance of lexical items and were invaluable in helping me to construct the child's lexicon and to determine when translation equivalents appeared in the child's productive vocabulary. Using weekly video recordings and daily diary notes produced a more complete and highly detailed picture of lexical development than could otherwise be obtained with each individual method.

Although all sixty video-recorded sessions between ages 1;1.and 1;10 were consulted along with diary notes to construct the child's early lexicon, twenty sessions recorded in a Spanish context and twenty in an English context were matched according to age and used to study quantitatively the child's language choice patterns. Utterances in each session were coded as English (ENG), Spanish (SPA), ambiguous between English and Spanish (E/S; e.g. [ba] for 'baby/bebé'), or as not having an English nor a Spanish source word (?; e.g. [aba] the child's word for 'close', said when closing doors). Then it was determined from the child's cumulative lexicon whether each ENG and SPA utterance had an equivalent produced earlier (lexicon available in Quay 1993b). Only tokens of English and Spanish words WITH EQUIVALENTS are used in the analysis of language distribution within each language context. (Please note that since reliability checks based on agreement in transcription and interpretation between different transcribers are still being done on the sixty video recordings used with improvements to transcripts and the lexicon when necessary, the results in this article supersede earlier reports in Quay 1992, 1993a, 1993b).

## RESULTS AND DISCUSSION

When Manuela's total productive vocabulary of 300 words at age 1;10.1 is examined, I find that her lexicon is composed of 50% (150 ENG items) English words, 35% (105 SPA items) Spanish words, 13% (38 E/S items) words ambiguous between English and Spanish, and 2% (6 "?" items) utterances without an English nor a Spanish adult source word. Table 1 summarizes Manuela's vocabulary development in her first six months of speech from ages 0;11.12 to 1;5.3 to test Stage I of Volterra and Taeschner's (1978) model as well as to look at her vocabulary up to age 1;10. Only the words coded as ENG (having an English adult source word) and SPA (having a Spanish adult source word) in the lexicon are considered.

**Table 1** Manuela's vocabulary at age 1;5.13 and up to 1;10 and the number with equivalents (EQs)

| At 1;5.13 | Up to 1;10 |
|---|---|
| ENGLISH - 25<br>EQs - 9 (36%) | ENGLISH - 150<br>EQs - 54 (36%) |
| SPANISH - 22<br>EQs - 9 (41%) | SPANISH - 105<br>EQs - 54 (51%) |
| Total English and Spanish - 47<br>EQs - 18 (38%) | Total English and Spanish - 255<br>EQs - 108 (42%) |

Manuela had nine pairs of equivalent terms in the first six months of speech. The first column of Table 1 shows that 36% of Manuela's English words and 41% of her Spanish words have equivalent terms in what Volterra & Taeschner (1978) would consider as Stage I (based on Stage I lasting for six months). In the second column, 36% of Manuela's English words had equivalents by age 1;10 compared to 51% of her Spanish ones by the same age. The percentage of the total English and Spanish words with equivalents in Manuela's lexicon increases only slightly from 38% at age 1;5.13 to 42% by 1;10. This shows that Manuela definitely had the lexical resources from the earliest months of speech to choose between English and Spanish terms and has a more or less constant proportion of equivalent terms at a later point in development as she did at the earliest stage of lexical acquisition. This provides no support for Volterra and Taeschner's (1978) two stages of early lexical development as there is no evidence in Manuela's early vocabulary of a single lexicon with "no equivalents" (Taeschner, 1983: 24) or even "almost" no equivalents (Volterra & Taeschner, 1978: 312).

The possibility therefore existed for Manuela from an early age to choose between two languages when using those lexical items for which she had translation equivalents. In Quay (1992), I have examined the distribution of English and Spanish words having equivalents in each language context separately. In this paper, the English and Spanish utterances WITH EQUIVALENTS in the two language contexts are analyzed according to 'appropriate' or 'inappropriate' language choice. To do this, twenty English-context sessions corresponding in number to twenty Spanish-context sessions are paired for quantitative purposes. For example, the number of appropriate and inappropriate utterances in session 7 in the English context is added to the number of appropriate and inappropriate utterances respectively in session 7 in the Spanish context to obtain for the two language contexts one total for appropriate language choice and one total for inappropriate choice. The two terms, 'appropriate' and 'inappropriate', are used in a specific sense to refer to whether Manuela is speaking the same language as her adult interlocutors. Therefore, an English item used instead of its Spanish equivalent would be 'appropriate' in an English context (where the adult is speaking English) but 'inappropriate' in a Spanish one (where the adult is speaking Spanish) and vice versa. Since the twenty English-context sessions and the twenty Spanish-context sessions are not matched exactly for age, a 'mean age' was reached by averaging the child's age at the corresponding session numbers in the two contexts. Table 2 shows this information. Further calculations were done to measure Manuela's 'appropriate' and 'inappropriate' language use in a standard unit of words per minute to ensure that variations in the duration of different sessions would not affect the results.

**Table 2** Mean ages of combined ENG and SPA sessions

| Session No. | ENG context AGE | SPA context AGE | **Mean AGE** |
|---|---|---|---|
| **1)** | 1;3.29 | 1;4.1 | **1;3.30** |
| **2)** | 1;4.6 | 1;4.8 | **1;4.7** |
| **3)** | 1;4.20 | 1;4.22 | **1;4.21** |
| **4)** | 1;4.27 | 1;4.29 | **1;4.28** |
| **5)** | 1;5.3 | 1;5.5 | **1;5.4** |
| **6)** | 1;6.15 | 1;5.18 | **1;6.0** |
| **7)** | 1;6.22 | 1;6.4 | **1;6.13** |
| **8)** | 1;6.29 | 1;6.18 | **1;6.24** |
| **9)** | 1;7.5 | 1;6.24 | **1;6.30** |
| **10)** | 1;7.12 | 1;7.0 | **1;7.6** |
| **11)** | 1;7.24 | 1;7.8 | **1;7.16** |
| **12)** | 1;7.26 | 1;7.15 | **1;7.21** |
| **13)** | 1;8.2 | 1;7.22 | **1;7.27** |
| **14)** | 1;8.9 | 1;7.29 | **1;8.5** |
| **15)** | 1;8.16 | 1;8.4 | **1;8.10** |
| **16)** | 1;9.9 | 1;8.12 | **1;8.26** |
| **17)** | 1;9.16 | 1;8.18 | **1;9.2** |
| **18)** | 1;9.23 | 1;9.11 | **1;9.17** |
| **19)** | 1;9.30 | 1;9.19 | **1;9.25** |
| **20)** | 1;10.6 | 1;10.1 | **1;10.4** |

Figure 1, which is based only on words with equivalents, shows a general picture of Manuela's language choice. The significance of Figure 1 is in the consistent pattern of divergence showing that more appropriate choices are made than inappropriate ones from a certain point of development onwards. There is an increase in the rate of appropriate utterances from session 14 (with a mean age of 1;8.5) onwards while the rate of inappropriate utterances produced remains at its relatively low level from sessions 1 to 20. A crossover point occurs where the appropriate and inappropriate lines intersect between sessions 13 and 14 - an interval of 9 days between a mean age of 1;7.27 (session 13) and 1;8.5 (session 14).

If we accept Taeschner's (1983) claim that no equivalents in the first few months of speech indicate one lexical system we would assume that the presence of equivalents would indicate that Manuela has two lexical systems. This conclusion, however, does not seem accurate given the results in Figure 1. Although Manuela was able to produce word-forms based on what she heard from her adult interlocutors, it is only after exposure over time to these word-forms from the two

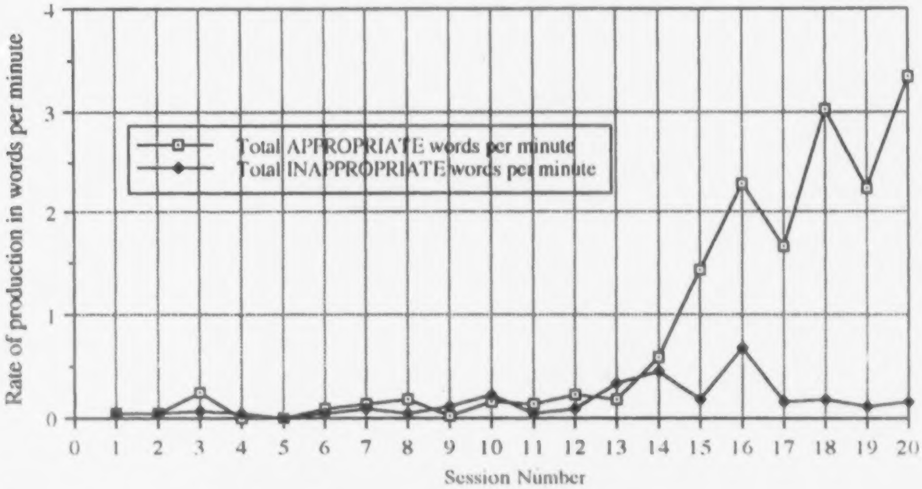

**Figure 1** Appropriate and inappropriate language choice

languages that she uses equivalents differentially according to language context. Since equivalents are available before age 1;8, the main difference between sessions before and after 1;8 appears to be Manuela's increasing ability to produce the appropriate equivalent more often and to produce more appropriate items in general than inappropriate ones.

The main insight provided is that as far as lexical development is concerned, there may be neither one nor two systems at the beginning of language production. Manuela neither lacks equivalents early in development, which would have been a sign of one lexicon according to Volterra and Taeschner (1978), nor, in spite of having translation equivalents, does she use her two languages in a contextually-differentiated manner from the onset of speech, which would have been a sign of two systems. If we adhere to these defining criteria for one and two systems respectively, the results imply that something between one and two systems existed in the first few months of speech for Manuela.

The issue of one versus two systems, I believe, is not fruitful in discussions of early bilingual development. There has been disagreement even as to the implications of one and two systems for linguistic theory (cf. Gardner-Chloros 1991). While some researchers have suggested that evidence of one system shows that the child has an innate linguistic knowledge with little effect from the two languages in the environment, Gardner-Chloros (1991: 274) points out that we could just as well argue that evidence of two systems supports the idea of "the existence of an innate mechanism for separating the two, that is a type of innate knowledge about co-occurrences in language". On an empirical level, using translation equivalents in early lexical development as a sign that bilingual children have one or two lexical systems is questionable as the early appearance of equivalents would be more likely under balanced exposure to equivalents than under unbalanced conditions.

I would argue that it may be more appropriate to accept that as children mature, they become more exposed to adult standards and acquire more complete repertoires in each language than to claim that bilingual children start out with one or two systems. I would suggest, moreover, that just as monolinguals at the beginning of speech do not have a language system identical to an adult one, young bilinguals also start out with an incomplete language system. By "incomplete", I mean that elements from the two languages, including translation equivalents, are produced but are not used in an adult-like manner by the young bilingual. It is only with time, adequate exposure and gradual experience that two language systems become identifiable.

## CONCLUSION

Although this case study does not permit generalizations to be made, generalizations can be falsified and the results are important insofar as they indicate what is within a range of possibilities and what other factors need to be taken into account. Since Manuela had translation equivalents practically from the beginning of speech, there is no support for Volterra and Taeschner's (1978) two-stage model of lexical development and consequently, no indication of a single lexicon as suggested by them. When the distribution of utterances with equivalents according to appropriate and inappropriate language choice is examined, it was found that a degree of contextual sensitivity started occurring around age 1;8. Since utterances with equivalents in the two languages are used indiscriminately without regard to language context between a mean age of 1;3.30 and 1;7.27 (cf. Figure 1 and Table 2), there is no support for the two-system hypothesis which claims that the two lexicons would operate independently of each other from the beginning. The results open to question the viability of the one-system and two-system hypotheses. Empirical evidence to the contrary has been found in my study for each hypothesis. I would thus call for sociolinguistic rather than psycholinguistic interpretations of data on bilingual children and encourage research in bilingual language acquisition to move away from the ever-popular debate over whether young bilinguals have one or two systems in their minds towards a view of bilingualism that places more emphasis on language socialization from birth. I believe that my study indicates that language socialization from birth equips the bilingual infant with the capacity to use language appropriately after the acquisition of sufficient resources and after enough linguistic exposure to how these resources should be used. Children who are 'learning' to use their two languages appropriately are in a sense involved in a process which takes time and requires continual exposure to linguistic interactions. Contextually-appropriate linguistic behaviour should thus be seen to be built up over time and with experience and not to be expected to occur overnight (just as language acquisition does not occur instantaneously). This interpretation of the results is further support for a sociolinguistic theory of language acquisition where the child's attention to the concrete linguistic reality in his or her environment is considered to be central to the acquisition process. The language-learning child can then be seen to work progressively towards speaking like the people around him or her.

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# II

# METATHEORY

# GUILLAUME: A MEANING-BASED APPROACH

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> The scientist looks for order in the appearances of nature by exploring such likenesses... order must be discovered and, in a deep sense, it must be created. What we see, as we see it, is mere disorder.
>
> (J. Bronowski 1965:13-14)

## 1. INTRODUCTION.

It seems to be a commonplace of linguistics in this century that the basic relationship in language is that between meaning and sign. Saussure (1916:32) expressed it in terms of sense and acoustic image, Bloomfield (1933:27) in terms of meanings and sounds, Chomsky (1966:10) in terms of semantic interpretations and signals. Regardless of the terms used, the same reality is being designated and the same importance has been assigned to it by each of these linguists: for Saussure, it is the essential relationship; for Bloomfield, it is what we study when we study language; for Chomsky, it is what constitutes the speaker's competence. If, along with these and many other linguists, we are prepared to grant that the meaning/sign relationship is basic to everything else in language, that the conception we have of this relationship is basic to our whole view of language, it follows that it will condition everything we do in linguistics. That is, the sort of thing we as linguists look for in order to explain what we have observed — the sort of theory we try to construct — depends on what we have postulated at the outset, on the way we have imagined the link between a linguistic sign and its meaning.

This is the subject I should like to discuss here. I want to contrast two radically different views of this basic relationship, Chomsky's and Guillaume's, and show that Guillaume proposes not just one alternative view, but a view of the meaning/sign link which is diametrically opposed to that of Chomsky. Since each of these views constitutes a starting assumption for linguistics, they can be evaluated only in the light of the consequences they lead to and so we shall have to examine, in a general way, where each of them leads, to contrast the type of theory they give rise to. Let us begin by outlining the two views.

## 2. CONTRARY VIEWS

In an early publication, *Syntactic Structures*, Chomsky makes the following remark (p.108):

> ... it is questionable that the grammatical devices available in language are used consistently enough so that meaning can be assigned to them directly.

This is revealing because it suggests that, in Chomsky's eyes, a grammatical device, a type of linguistic sign, has no regular, predictable link with its meaning. Such an assumption is quite understandable in the light of the numerous unsuccessful attempts on the part of linguists to find the 'basic' meaning of different grammatical signs. Though more forthright than many in avowing failure, Bloomfield (1933:280) is typical in his findings with regard to the simple and progressive forms in English:

> the difference between *wrote* and *was writing* is so elusive and differs so much for different verbs and in different phrases, that the definer, after stating the main principles, cannot do better than to resort to a demonstration by means of examples.

Confronted with the repeated failures of other linguists to find order or unity in the elusive differences of sense expressed by some grammatical form, Chomsky assumes that there is no such order or unity. That is, he postulates that the meaning/sign relationship is inconsistent, disorderly, unpredictable. We shall see that this view colors all his subsequent theorizing, but first let us examine Guillaume's contrary view of the same relationship.

Some forty years earlier, Guillaume's first important work described in considerable detail the various elusive senses expressed by the articles in French. Familiar with the remarkable scientific work of the comparativists of the nineteenth century, he attempted to discover order or unity in these various observed senses through an 'application of the comparative method' (1919:11). Now this attempt to apply the tried and true comparative method is significant on two counts. We know that the comparative method had been worked out and refined as an instrument of analysis permitting linguists to reconstruct the common non-attested ancestor of diverse forms attested centuries later in different languages of the same family. What Guillaume was trying to do in the 1919 volume was to apply this method, not to the forms, the physical signs, but to the meanings, the various observed senses of the article in Modern French. This was a significant innovation. An even more significant innovation was the fact that he was trying to apply this method of analysis not in order to reconstruct a non-attested form which had existed some centuries earlier, but in order to reconstruct the non-attested potential meaning of the article which, he postulated, the speaker must somehow have in mind before beginning to speak, before beginning to construct the observed sentence with its particular use of the article expressing one of its actual senses. Guillaume was applying the comparative method, not to forms separated by the long stretch of historical time it takes for phonetic change to occur, but to meanings separated by the extremely short stretch of operative time it takes for a speaker to bring an article to consciousness for a particular use in a particular sentence. He was actually applying the venerable method of comparative linguistics to the moment of speech in an attempt to reconstruct and describe the unity underlying the various observed senses of the articles (for a more detailed treatment, see Valin, to appear). The very originality of this attempt scandalized most linguists of his day so that they failed to appreciate what Guillaume was trying to do and even today many remain incredulous when confronted with the idea that some mental process or operation is required for us to use an article, or any other word for that matter. But with recent progress in neurophysiology and related fields, even linguists are becoming less incredulous when they hear speak of the mental mechanisms on which our grammatical systems are based.

Guillaume failed in his early attempt to find the underlying or potential meaning of each article because at that time he had not yet discerned clearly enough the basic parameter for his analysis: the micro-time[1] involved in any subconscious mental operation. So it was not until over twenty years later that Guillaume finally saw for each article the single meaning underlying and permitting its various uses. But this is another story which I cannot go into here (see Hirtle 1984). The important point for us is that even when confronted with his failure to find the 'basic', or better, potential meaning of those two words, which can express an extraordinary range of senses, including, at the limit, contrary senses — even then Guillaume did not throw up his hands and declare that the link between sign and meaning is disorderly but persisted in his assumption that it is somehow orderly, that a linguistic sign somehow has one meaning.

From this it becomes evident that Chomsky and Guillaume adopt contrary positions with regard to that relationship which is fundamental to language and consequently to linguistics. For the one, the relation between sign and expressed sense is inconsistent, disorderly; for the other it is somehow consistent, orderly. At the outset, of course, neither of these linguists offered proof that his position was the valid one since in order to do any work at all in linguistics one must adopt either the one or the other: they really are starting assumptions, postulates. Furthermore, there appears to be no middle ground between these two positions: something is either inconsistent or consistent, disorderly or orderly.[2] The opposition between the two thus forms a watershed, a continental divide which, because it is a postulate, a necessary starting assumption, obliges every linguist to choose, wittingly or unwittingly. This is why it is important to be aware of the consequences entailed in choosing one or the other. We shall examine five of these consequences in the light of Bronowski's observation (1965:13) that 'All science is the search for unity in hidden likenesses'.

## 3. CONSEQUENCES

3.1 FORM VS. MEANING IN GRAMMATICAL THEORY. The immediate consequence of a linguist's meaning/sign option is obvious: theory must be based on whatever is the unifying element in the variously observed phenomenon. For those who adopt the Chomsky option, 'meaning will be relatively useless as a basis for grammatical description' (1957:101) because of its 'imperfect correspondences' with the form, the sign. That is to say, it is the form or sign, not the meaning, which shows constancy. From this it follows that:

> only a purely formal basis can provide a firm and productive foundation for the construction of grammatical theory. (1957:100)

Most people are familiar with this dictum but not all have reflected on what it entails for a grammatical system: it means that the basis for a grammatical system will be the relationship between the physical signs involved. That is to say, for a system like that of tense in the indicative in English, the basic relation is that between ø and *-ed*: Now this can account for verbs like *bake/baked, paint/painted,* etc., in fact for most verbs in English, but we also have *sing/sang, is/was, put/put* etc. The problem posed here is a real one: how can adding the *-ed* suffix be considered the same thing as changing a vowel, or as changing a vowel and adding a consonant, or making no change, etc.? What is the 'hidden likeness' here, the unifying element, which permits us to consider them as part of the same system? Some of Chomsky's predecessors attempted to grapple with this difficulty but the outcome was, at best, amusing and in any case failed to meet the criticism that only a hidden appeal to meaning permits us to consider such vastly different 'formal devices' to be expressions of the same tense. To my knowledge nobody has yet given a satisfactory solution to this problem, inherent in any approach which purports to be 'purely formal'.

On the other hand, for those who opt for a constancy in the meaning/sign relationship, the Guillaume option, meaning will be the necessary foundation for grammatical theory since it is meaning which is the unifying element, the unity in hidden likenesses underlying the observed phenomenon. That is to say, the basis for a grammatical system is the relationship between the meanings involved: the opposition between the meanings 'non-past' and 'past' remains constant whatever the physical means used to express it. Of course, this option is confronted with its own inherent problem: explaining how the diverse senses of the same morpheme can arise from a single basic or potential meaning. For example, the *-ed* tense is normally used to express 'past' in *He opened the window*, but we can also use it when speaking of something present or even future, as in *If we opened the window, we...* What is the hidden likeness here? Is there an underlying unity of meaning here which permits us to consider this the same form in each case? A solution based on Guillaume's technique for analyzing meaning has been proposed for this use (see Hirtle to appear) and for a number of other similar uses. On the other hand many more such problems remain to be analyzed in this way.

All this brings us to consider the nature of a grammatical system. Like any other system, a grammatical system must be a set of relationships between items. Our basic option, however, determines the nature of these items: they are either signs or meanings, or if you prefer, either 'formal devices' or 'semantic notions'. Now the set of relations instituted between signs, items which are essentially phonological or phonetic, will be very different from relations between essentially notional or meaningful items. Our basic option thus leads inevitably to two very different types of grammar, and one of the first manifestations of this difference is found in the relations between words, in the syntax.

3.2 LANGUAGE: RULE-GOVERNED OR MEANING-EXPRESSING. The currently widespread view that a theory of syntax must be established without any appeal to meaning is, of course, a necessary consequence of the 'purely formal' option. From this point of view, since a grammatical system is essentially a set of relationships between forms, between physical signs, the whole of syntax must be described in these terms. Attempts to establish a form-based theory have focused on 'capturing' the frequently observed facts of discourse by means of rules, which describe regularly occurring correspondences between forms in the data. For example it is traditional to describe the syntax of *some* and *any* in terms such as: 'use *any* in negative contexts, *some* in positive contexts.' There is, however, no reason given to explain why the sounds of *any* are compatible with the sounds of a negative word like *not* or *nobody* whereas the sounds of *some* are not. That is to say, the relationship between the sign of the quantifier and the sign of the negative is not motivated, not depicted as the outcome of some factor inherent in these two forms and so the link between them remains arbitrary, something not to be understood but simply to be accepted as such. Similar remarks might be made concerning the rule for the use of *do* auxiliary in questions and negatives, as well as the rule of verb agreement in English whereby an *-s* suffix is found on the non-past of the verb provided that there is no *-s* on the headnoun of the subject, and vice versa. Such ways of presenting some of the most frequently observed facts of English syntax are convenient because very succinct, but they depict only the correspondences between disparate items, not the hidden likenesses sought in a science. And this appears to hold for all purely formal attempts to theorize syntax: the relations between words are observed but not explained.

Notwithstanding this limitation, rules of this type have come to be seen in a very different light, perhaps because they are exemplified so frequently in usage. Many linguists have come to consider them, not just as a convenient mode of description, the result of observing usage, but as a condition governing usage, as a prior constraint on speakers, and this to the point that it is felt by some that speakers actually obey the rules. Thus what was originally a descriptive device, a means of summarizing regularities observed in the data, is hypostatized and so comes to be viewed as a causal device, a means that somehow governs how a speaker produces discourse.

For a meaning-based approach, on the other hand, such rules of usage simply pose the problem of finding an explanation since all facts of syntax are to be explained in terms of meaning. Why does *any* occur with negatives? Why is *do* auxiliary used in questions and negative sentences? Why do third person singular non-past verbs take an -*s*? It is often very difficult to explain such 'regular' usage, such commonplace observations. Thus it has taken many years of research to show that the frequent compatibility of *any* and incompatibility of *some* with negatives is a direct consequence of their respective meanings (see Hirtle 1989). Likewise for *do* auxiliary. And work is still required to explain satisfactorily verb/subject agreement in the non-past in English because the meaning of the -*s* suffix of the verb has not yet been clearly discerned.

Thus a purely formal approach tends to reify a rule describing usage and so consider it as an explanation whereas the meaning-based approach attempts to explain the observed occurring and positioning of forms in terms of the meaning they express. This first difference with regard to syntax concerns 'regular' usage, but when it comes to 'irregular' usage the difference is even more marked.

3.3 'EXCEPTIONS' AS DATA. Describing by means of rules, although valid and indeed economical for the most frequent type of usage, does not account for the less frequent, 'irregular' or exceptional uses. For example, cases where *some* cohabits with a negative form (e.g. *I don't understand something in this text.*) or where *any* is used in a strictly positive context (e.g. *Any good household cleaner will do the job.*) are not 'captured' by the traditional rule. Likewise for negatives without *do* (e.g. *He suggested I not go.*) or the rule for verb/subject agreement in English in cases of 'disagreement' (e.g. *My family are too careful of me.*). Indeed, one wonders how such cases could be described in terms of a rule of syntax based on purely formal criteria.

A meaning-based approach, on the other hand, undertakes to explain all uses, frequent or rare, of native speakers (who share the same linguistic system). Occasional uses such as those just cited can be explained on the basis of the meaning expressed by tracing the sentence meaning back to the word constituents involved and contrasting it with the meaning expressed by usual, 'regular' usage. Thus *some* with its sense of posing existence would normally contradict *not* with its sense of negating existence, but if no such incompatibility of sense arises, as in the above example, we can use them in the same context. And in saying *My family are*..., the speaker wishes to express the intervention of each member of the family, rather than the family as a single unit. In all cases, frequent or rare, the role of speakers is the same: to establish syntactic relations between the meanings of words in order to express what they have in mind, i.e. the experiential content which prompted them to speak in the first place. Thus what governs usage is the meaning to be expressed, meaning which is a representation by means of words of the speaker's momentary experience (see Hirtle 1994).

The two approaches are thus far apart here. Autonomous syntax, which is essentially a matter of relationships between forms, cannot accomodate irregularities in these relationships. Such infrequent uses are therefore considered at best peripheral but often as something not to be included in the data. Meaningful syntax, on the other hand, essentially a matter of relationships between meanings, accomodates infrequent uses as infrequent ways of joining ideas together. In fact, an expression where there is no relationship between the ideas would be nonsense, incomprehensible, unthinkable and so cannot arise in the data because a set of words which does not make sense, at least to the speaker, simply would not be a sentence, would not reflect a human experience.

Thus a linguist working in a meaning-based approach actively seeks out every attested use because every attempt on the part of a speaker to express some experiential content constitutes data, facts to be explained, a further test for proposed explanations. On the other hand, in a purely formal approach a linguist makes a selection in the data and considers only the great bulk of uses because they provide supporting evidence. To avoid the obvious criticisms involved in selecting data in this way, attempts are made to refine the descriptive net of rules so as to capture more and more of the rare uses. Such attempts have, however, resulted in a very complex set — some would say a jungle — of rules and this has posed a problem for those concerned with how we come by our mother tongue.

3.4 ACQUIRING THE MOTHER TONGUE. The very fact that infants acquire the ability to express themselves through some human language with all its complexities as well as the extraordinary rapidity with which they do it call for some explanation. Those who assume that rules govern usage are confronted with the problem of how 'children learn the dizzyingly complex underlying rules of spoken language' as one writer put it recently. Such linguists are led to postulate that some of these rules — supposed to be common to all languages, a set known as Universal Grammar — are innate. It has even been proposed that such rules are acquired by genetic mutation. This need to assume innateness to explain how infants acquire a set of rules, postulated as governing usage, is viewed by many as a reductio ad absurdum, a clear indication that the starting assumption of this approach is at fault.

Linguists who appeal to meaning are also obliged to infer something innate, namely, the existence of some innate capacity permitting infants to acquire their mother tongue. Since, in this approach, a grammar is essentially a systematic organization of abstract ideas, of grammatical meanings, the innate capacity is assumed to be that required for the acquiring and organizing of any sort of ideas. It is, in fact, the capacity required by any person to learn how to think in a human fashion – including that for generalizing (and particularizing), for establishing relaionships – the very capacity assumed to be innate by most scholars who consider human thought a specific characteristic of human beings. In this approach, therefore, there is no need to postulate anything innate other than what is already postulated, implicitly or explicitly, by most other scholars concerned with things human.

For a purely formal approach, the problem of acquiring language leads into a blind alley, an outcome which reflects most unfavourably on the starting assumption. For a meaning-based approach, the same problem leads to a position commonly adopted by philosophers and others to explain the existence of human thought. The starting assumption in this case receives some confirmation from such an outcome.

The several points brought up so far make it quite clear that the very notion of syntax is thus conceived in two different ways. On the one hand it is the rules of syntax which permit the use of words in a given structure because syntax, being autonomous, is seen as a set of arbitrary relationships between forms, between phonological units. On the other hand it is the meaning within the words themselves which determines the syntax because a syntactic relationship is seen as a relation of coherence between meanings. The immediate consequence of this is that the linguist will focus either on the sentence, the unit of syntax, or on the word, the unit of meaning, and this brings us to the most fundamental difference between the two approaches.

3.5 THE PLACE OF THE WORD IN A GRAMMAR. A purely formal approach depends on the observation of differences in the physical realization of discourse. In English, variability in the phonological form of words is relatively restricted: most substantives can take only an *-s* suffix, most verbs only *-s*, *-ed* and *-ing* and many other words are invariable.[3] Since so many English words appear in the sentence as an indivisible form, both the relative position and the co-occurrence of words is of considerable importance to indicate grammatical meanings in discourse. As a consequence, for a linguist whose first concern is the physical sign, the sentence will be the focus of interest because it is here that all signs, be it the form, the order or the co-occurrence of words, can be observed. That is to say, a 'strictly formal' approach to language leads to a theory which is primarily syntactic, based on the sentence, because in a language like English much of the grammatical meaning is signified by means of syntax. This leads to the view that rules govern usage, as seen above, that syntax conditions meaning. (In certain other languages, Eskimo for example, where word order is of little importance in this respect, the main focus would not be on the sentence.)

On the other hand, an approach based on meaning aims at explaining the facts of syntax in terms of meaning and so is constrained to examine the units of meaning that enter into syntactic relations, i.e. the words. For example to explain why *any* is compatible with negation whereas *some* is usually not, it was first necessary to work out, using the appropriate techniques of analysis, the underlying meaning of each quantifier and then to show how they form a small binary system. Only after these meanings had been clearly discerned did the facts of syntax become understandable. The observed relations with negation were seen to be consequences of the underlying meaning of the quantifier, and even in contexts like questions, where both quantifiers can be used, the slight differences of meaning expressed were seen to be the result of the underlying meaning postulated for the quantifiers. The principle involved here — meaning conditions use — applies in all cases. Thus it can now be demonstrated how the meaning of, say, auxiliary *have* determines its co-occurrence with the past participle of the verb, whereas auxiliary *do*'s meaning is the condition for it to co-occur with the infinitive. A meaning-based approach seeks to describe how any word is constructed in thought, meaningwise, in such a way as to permit it to be used in a sentence, to permit it to enter into the syntactic relation the speaker wishes to establish for it. That is to say, a meaningful approach to language leads to a theory based on the word because in any language the first form for expressing meaning is the word and so the nature of a syntactic relationship is seen to be conditioned by the nature of the words involved. Without a theory of the word in a given language, no theory of syntax is possible since morphology (= the grammatical meanings of a word) conditions syntax (= the grammatical use of a word).

We can see here that the two approaches are poles apart. Because a purely formal approach attempts to establish a theory of grammar strictly in terms of the relations between forms, it ignores the make-up of words, their meaning components, except when they exhibit a formal variation. A meaningful approach, on the other hand, bases grammatical theory on the meaning of words and so can establish a theory of the sentence only after a theory of the word has been sufficiently developed. An approach that seeks to provide a theory of the word as well as a theory of the sentence is preferable to one that largely ignores the word because the word, or more exactly the vocable, is after all a true universal of human language: absolutely every act of language everywhere involves words, and a theory of the word must explain to us why this is so. But this is a subject which cannot be developed here (see Hirtle 1993 for comments).

## 4. CONCLUSION

From this summary survey it can be seen that the manner of postulating the basic relationship in human language, that between meaning and sign, has important consequences both for the way we view the nature of language and for the way linguistic theory is developed. Postulating the basic relationship as disorderly, inconsistent, leads to a view of grammar as essentially a series of rules with no apparent organizing principle grouping them together. As a consequence, syntax is presented as an arbitrary collocation of forms justified not by the forms themselves, the physical manifestation of words, but by the very fact that they occur frequently enough to be described by a rule, less frequent collocations being disregarded. And to justify the rules themselves another postulate is required: they are declared innate. Postulating that the basic meaning-sign relationship is orderly, consistent, leads to a view of grammar as essentially a systematic set of abstract meanings for organizing the lexical meanings called on to represent the speaker's momentary experience. Each such lexical meaning is organized, grammatically systematized into one variant of a single, language-specific grammatical/lexical form, the word. The corresponding set of signs in appropriate order permits the various meanings to be expressed within the framework of another grammatical/lexical form, the sentence.

Our view of the basic relationship determines not only our view of language but also the scientific value of the linguistic theory it gives rise to. A phenomenon conceived as inconsistent, disorderly, haphazard remains inexplicable whereas discerning some consistency, order, rationality makes explanation possible thanks to the principle of this order. Hence 'unity in hidden likenesses' is sought by all science. This is why it is so important for anyone given to reflecting on the workings and nature of language to determine whether the relation 'linking sense to sound and light' is orderly and consistent or not. This postulate will determine not only one's view of the nature of language and consequently of linguistics, but also one's view of the nature of human thought itself.

## NOTES

[1] Introduced by Valin (cf. 1994:151), the term 'micro-time' designates the time necessarily involved in any of the mental operations of language, time which is so short that with the means available today we cannot measure it, let alone become conscious of it.

[2] It has been suggested that perhaps some meaning/sign units are orderly, others not. This would imply that the meaning/sign relationship is not really fundamental, as assumed in the present article, since there would be some other principle governing its two manifestations, but what this might be remains a mystery. The question is important because without some fundamental principle it is hard to conceive how a language can constitute a single entity. Indeed, awareness of the variability of both signs and meanings has led some linguists to propose that there is no such thing as the English language. Such a proposal amounts to accepting the appearances of language, 'what we see, as we see it' with all its 'disorder', as the basic reality of language and so precludes the need to 'look for order' which, according to Bronowski, is the very task of science.

[3] For this reason English has been called 'an eroded language', an apt description for those who adopt a purely formal approach. For those who consider meaning primary, however, it is a misleading description because it suggests that English words have lost some or all of their grammatical meanings, and this is not the case.

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# GRAMMATICALITY JUDGMENTS AND THE GARDEN-PATH DILEMMA IN LINGUISTIC RESEARCH

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Linguistic research has some of the characteristics of garden-path sentences. We continually test our growing understanding against further evidence. When this runs into nonsense, as it often does, we must go back and start again. But in linguistics research our new understanding may again run into nonsense and we are then faced with a dilemma: should we go back only a short distance to restart, with the danger of once again running into nonsense, or should we go back farther, with the danger of giving up too much of our earlier understanding, which had seemed to make eminently good sense. The large number of existing restructurings of linguistic theory is in itself an argument that they may all be false restarts and that we have not been going back far enough to find and correct all of our initial false understandings.

## The semiotic-grammatical tradition

Before the beginning of modern scientific linguistics about two centuries ago, there was a traditional conception of language that had developed in normative grammar and in the ancient semiotic theory of knowledge.

The goal of normative grammar was to show how to speak and write with distinction. It set forth an ideal of perfection. Starting in ancient Greece, normative grammar in the Western tradition had flourished for 20 centuries through the teaching of Latin and Greek in grammar school. This form of grammar had been adapted to all the standard languages of European nationalism. Normative grammar operated with statements and rules to set forth the received norm and to distinguish the correct from the incorrect. This form of grammar had become so firmly entrenched in Western culture that it seemed obviously true and beyond question to every educated person.

The goal of the ancient semiotic theory of knowledge, which also set forth an ideal of perfection, was to tell how to know the truth about the world and how to say it. Starting with Aristotle or before and reaching its ancient culmination with the Stoics of the second century B.C., the semiotic theory of knowledge has been nurtured and developed in philosophy for over 20 centuries. Semiotic theory operated with a triadic theory of signs showing the relation of propositional knowledge about the world to the real world itself and the relation of the sounds of speech to the propositional knowledge they represent. This relation of sound to meaning was expressed in terms of a phonotactic level with phonemes as elements, a syntactic level with the parts of speech as elements, and a relation of signification between the syntactic level and the level of propositions. This semiotic theory formed the theoretical basis for normative grammar and became so firmly entrenched in Western thought that it seemed obviously true and beyond question to philosophers and linguists alike.

### Linguistics abandons normative grammar

The beginning of modern scientific linguistics two centuries ago was marked by new goals: to understand how modern languages are related to ancient languages and to each other, to understand how languages change, to describe the many languages of the world, and to understand the nature of language in general. These new goals would require a restart as a science, and it gradually became clear that the demands of science would require that we abandon the tradition of normative grammar, one of the two traditions that had seemed obviously true.

Since it seemed that language change may be greatly influenced by the dialects and the ways that people actually speak in their daily lives, one would have to discard the normative idea that dialects are inferior. The usages of prestigious speakers and authors were not to be given exclusive priority.

Exotic languages were being studied that had no system of writing, so grammars for them could not be based on acknowledged literary masterpieces or on ancient writings as had been the case in the normative tradition. And since these languages were often initially unknown to scholars, one could not use the grammarian's intuition as to what was the best usage; one had to rely on linguistic informants.

It was thus decided to throw out entirely the venerable normative view of grammar as prescribing the rules for speaking or writing with distinction. Instead, one would describe how people really talk. One would strive for scientific answerability of the grammar to the evidence. Each language was to be described in its own terms. The model of Latin cases, tenses, and so on was not to be used when it was not appropriate.

But if the model of Latin could not be trusted, how far back must we go in our restructuring. Could we retain concepts of words, parts of speech, inflections, etc.? Experience with exotic languages led to doubts. Bloomfield remarked that even the distinction of verb-like and noun-like words as separate parts of speech may not be universal.[1]

### Descriptive linguistics has led to nonsense

Although scientific-descriptive linguistics abandoned normative grammar, it did not also abandon the semiotic-grammatical tradition on which normative grammar had been based, and it did not question the appropriateness of the study of language in that traditional sense. It retained virtually all of the ancient theoretical structure that had been designed to support prescriptivism and a philosophical theory of knowledge. But this structure could not support a science because, as it turned out, its foundations could not be scientifically tested.[2] Consequently, scientific-descriptive linguistics, despite its name and goal, was not scientific in its foundations from the start.

This has been the basic cause of most of the current problems in linguistics. The restart did not go back far enough to provide for a real science and linguistics research has consistently been led into nonsense.

Although the idea of the inferiority of dialects had been abandoned, the idea was retained that language is out there, an external norm, perhaps not a prescriptive norm, but a norm nevertheless, a norm of perfection and uniformity. Saussure, for example, said that language is perfect only in a collectivity.[3] Chomsky speaks of an ideal speaker-listener in a perfectly homogeneous speech community.[4] Thus we have retained the conception of a language as a single uniform external norm and that grammar describes the language. This idea of perfection in uniformity has led to nonsense in dialectology, in sociolinguistics, and in pidgin and creole studies. A realistic description must focus not on norms or intuitions of norms but on people themselves, individually and collectively.

Also retained was the idea that people use this norm when they speak and understand or that they speak and understand by "using" a language or a grammar. This nonsense may have originated in analogy to a pupil using a Latin grammar book in puzzling out how to read or write Latin. But speaking and understanding one's native language is quite different from that. Even Chomsky admits that how a person uses a grammar in speaking and understanding is not just a problem but a real mystery. It's actually nonsense. If we want to understand how people speak and understand, we must study people, not language or grammar or intuitions of grammaticality.

We have retained the tradition of using textual evidence. Historical linguistics has, of necessity, relied on textual evidence. But also synchronic studies have used available contemporary texts or invented texts or informant responses treated as texts. But textual evidence alone provides inadequate evidence for understanding how people speak and understand. It neglects what is sometimes called the context of situation, which traditional apparatus cannot handle without the dodge of artificially textualizing it (thus making it con*text*), and then deleting it again. Actually, the operative context of situation is internal to the people speaking and understanding. We must study the people if we want to take the context into account and not be led into nonsense.

Also retained was the use of informant judgments of acceptability or grammaticality as data—judgments of correct or incorrect retained from the normative tradition. This has led to observational error when, as is often the case, what people think they do or say is different from what they actually do or say. Furthermore, judgments of acceptability or grammaticality made by the linguist, also retained from the normative tradition where grammarians made decisions of correctness, is a clear invitation to observational bias and the collecting of unreliable data. This is not the way to reproducible science.

Another bit of nonsense is that just because Chomsky can't see how a child could learn a generative grammar in the time available using inadequate data (textual), we must conclude that generative grammar is innate in the child.[5] This nonsequitor assumes infallibility on Chomsky's part in knowing what the child learns and what the child uses as data. The child actually learns to talk within a matrix of social relations, needs, tasks, and external realities that the traditional focus on text and grammar completely misses. If we want to understand scientifically how children learn to talk, we must study not texts, grammar, or intuitions of grammaticality, but the children themselves as embedded in the world in which they learn.

**We must restart farther back**

The restart did not go back far enough. Having abandoned one of the ancient traditions that had seemed obviously true—the tradition of normative grammar, we must now go back and abandon the other—the semiotic grammatical tradition on which normative grammar had been based. We must put in its place a scientific discipline that studies people, individually and collectively.

It was early realized that linguistics should study people. One can mention Osthoff and Brugmann,[6] Hermann Paul,[7] and many others even up to the present day.[8] But the full implications of the suggestion were not understood. It was not realized that it would require abandoning a focus on text, utterances, language, and grammar in favor of studying people directly, individually and collectively. It was not understood that studying people scientifically would require moving from the metatheoretical logical domain of the semiotic theory of knowledge, with its abstract norms of perfection, to the real-world physical domain of standard science where theories of people can be tested scientifically against the evidence from real people.[9]

The semiotic-grammatical tradition was so thoroughly entrenched that it was difficult or impossible to think about linguistic questions without invoking its concepts at every turn. Consequently, we find repeated efforts to study people indirectly through grammar, but these have inevitably led to nonsense. A considerable amount of ingenuity has been expended uselessly in efforts to come to grips with the phenomena without abandoning the semiotic-grammatical framework. But we must abandon it if we are to understand the phenomena scientifically, for the semiotic-grammatical tradition is incompatible with science. Its foundations cannot be scientifically tested.

A move to science in the physical domain promises many advantages: We will be able to eliminate the nonsense of having only one theory, grammar, when in reality we need two interrelated theories, one focused on people individually and one focused on people collectively. This will make possible the proper handling of face-to-face interaction, children learning to talk within their social matrix, variation in the individual, variation in the community, and historical change.

We will be able to develop physically dynamic theories to handle the dynamic processes and changes that take place as people speak and understand and as groups of people interact in common tasks such as negotiating, agreeing, disagreeing, and cooperating.

We will be able to handle directly the effect of context in the individual and in the group, and this will allow us to handle phenomena previously seen as semantic and pragmatic in a proper scientifically testable theory.

In the physical domain our results will fit together with scientific results from other neighboring disciplines. Linguistics will no longer suffer from its self-imposed isolation in the logical domain and from its continual domain confusions as it tries to be scientific there.[10]

Perhaps most important, we will no longer have to put up with the logical-domain practices of relying on intuition, salesmanship, polemics, fads, or following tradition or authority. Publicly agreed external scientifically reproducible criteria are readily available in the physical domain for determining what to believe in linguistics. This will inevitably lead to a withering of partisanship and to greater cooperation and agreement throughout the discipline.[11]

**Notes**

[1] "The only useful generalizations about language are inductive generalizations. Features which we think ought to be universal may be absent from the very next language that becomes accessible. Some features, such as, for instance, the distinction of verb-like and noun-like words as separate parts of speech, are common to many languages, but lacking in others" (Bloomfield 1933:20).

[2] See Yngve (1981, 1986, and particularly 1983).

[3] ". . . la langue. C'est un trésor déposé par la pratique de la parole dans les sujets appartenant à une même communauté, un système grammatical existant virtuellement dans chaque cerveau, ou plus exactement dans les cerveaux d'un ensemble d'individus ; car la langue n'est complète dans aucun, elle n'existe parfaitement que dans la masse" (Saussure 1916:30).

[4] "Linguistic theory is concerned primarily with an ideal speaker-listener, in a completely homogeneous speech-community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance. This seems to me to have been the position of the founders of modern general linguistics, and no cogent reason for modifying it has been offered" (Chomsky 1965:3). Cogent reasons to modify it are that it leads to nonsense and that its foundations cannot be scientifically supported. And therefore it encourages deferring instead to authority or tradition or the latest fad, relying on intuitions regarding theory and their explication, defending with polemics, trading on the great-man syndrome, and other scientifically irrelevant appeals.

[5] See Chomsky (1965:30ff. and elsewhere). Chomsky's innateness hypothesis has been widely criticized in the literature.

[6] "Languages were indeed investigated most eagerly, but the man who speaks much too little" (Osthoff and Brugmann 1878:iii). "It was not the Greek language that dropped final $\tau$, but those among the Greeks with whom the sound change started" (1878:xii). Original emphasis; translations from

Lehmann, (1967:198, 209).

[7] "The most special task . . . seems to be that of showing how the single individual is related to the community; receiving and giving; defined by the community and defining it in turn; and how the younger generation enters on the heritage of the elder" (Paul 1889:xxx).

[8] For further information on the troubled history of linguistic interest in people, see Yngve (1981).

[9] Discussions of the confusions in linguistic writings between the logical and the physical domains may be found in Yngve (1986, in press, 1981)

[10] For a discussion of the isolation of linguistics from the sciences under the traditional logical-domain conception of linguistics and its rightful place among the sciences under a physical-domain conception of linguistics, see Yngve (1987).

[11] Further information on what a scientific linguistics in the physical domain would look like and its many advantages may be found in Yngve (1986) and in a number of LACUS papers over the years. A shorter and more recent discussion with annotated references to the literature will be found in Yngve (in press).

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# III

# PHONETICS AND PHONOLOGY

# MUSIC AND ACCENT DISCREPANCY

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## *Pitch Accent versus Stress Accent in Welsh*

Since Old Welsh (ca. 800-1175), the principal accent pattern has been the rise of pitch throughout the word culminating in the high pitch accent in the ultima. Several linguistic phenomena in Welsh are founded upon the difference between nonultimate nonpitch syllables and ultimate pitch syllables. The most prominent are two alternations with the mid central vowel [ɵ].

The letter *y* is pronounced as the high central vowel [ï] (or the high front vowel [i]) in the ultima and as the mid central vowel [ɵ] in other syllables — a mark in many languages of the loss of accent. For instance, the plural of *mynydd* [mɵnïδ] ([mɵniδ]) 'mountain' is *mynyddoedd* [mɵnɵδoiδ].

A parallel alternation in which a high vowel is realized concurrently with the high pitch accent involves *w* [u] and *y* [ɵ]. For example, the plural form of *bwrdd* [burδ] 'table' is *byrddau* [bɵrδε].

In addition to the pitch accent pattern, there is a separate stress accent pattern. This pattern maintains three levels of phonological pertinence, with the primary stress on the penult, the secondary stress on the ultima, and the weak tertiary stress on the antepenult (Griffen 1979).

While there is considerable debate on the status of stress in Old Welsh (see Griffen 1991/92), there is no doubt but that the stress accent pattern has existed alongside the pitch accent pattern since Middle Welsh. While stress is often treated as though it were the principal accent pattern in Middle and Modern Welsh, this emphasis in linguistic description is probably due to the influence of English and other languages, for the linguistic patterning has most often followed the pitch accent, not the stress accent (see Williams 1989).

Perhaps the clearest indication of the primacy of pitch accent can be found in the intricate poetic rules of *cynghanedd* ('correspondence' — including alliteration, rhyme, etc. — see Morris Jones 1925, Parry-Williams 1936). In this traditional poetry, a monosyllable must often rhyme with a disyllable or a polysyllable. When this occurs, the monosyllable which combines both heavy stress and high pitch rhymes with an ultima which has high pitch but not heavy stress. In terms of stress alone, this would be tantamount to rhyming English *ring* with *wearing*. Obviously, all that is important for rhyme is pitch; and stress is not significant.

*Penillion versus European Song*

*Cynghanedd* poems have often been sung or declaimed along with harp music in what are called *penillion* ('stanzas, verses' — see Davies 1983). In the earliest *Ap Huw Manuscript* (Polin 1982), this harp music is highly repetitious, although modern arrangements use more complicated tunes and airs. The language of the poetry follows a different melody altogether, often in a different meter (for example, the harp duple and the voice triple), allowing the vocalist to sing or declaim to a melody not connected with the rhythm of the instrumental music. Indeed, as Roberts notes, "prior to Tudur Aled [ca. 1465-ca. 1525] there was no such pursuit as composing music for words, or words for music. One made poetry, another made music, and a third united the two and sang the wedded poetry and music" (1925/26:20).

In the Early Modern period though, rhythmic European music was introduced under the Tudor dynasty at a time when the dynamic new "isorhythmic" music (or polyphony) was sweeping Europe (Strohm 1993). The new approach to rhythm brought fundamental changes to Welsh music, as it emphasized the beat from the instrument and required it to coincide not with the pitch accent, but with the heavy stress of the penultimate syllable.

There was a brief attempt to apply the rhythmic music to *penillion*. In the mid seventeenth and the eighteenth centuries, such poets as Huw Morus composed a new "accentuated" *cynghanedd*, in which "the musical phrase was always very strictly observed and the words made to conform to the framework of the tune" (Parry 1962:552; compare Williams 1989:227).

The experiment, however, did not prevail, and *cynghanedd* with its *penillion* returned to its tradition and developed separately from rhythmic song. Perhaps the most widely known area of the latter development has been in church hymns such as *Hyfrydol*, *Cwm Rhondda*, and many other tunes that have found their way into English hymnals. Other, less well distributed songs following the European rhythmic model include the popular Welsh folk song and ballad, the stable loft song (Saer 1980), and the *plygain* carol (Saer 1977). (Compare also Gwynn Williams 1971.)

Thus, a division has evolved in the accent patterns of Welsh. For literary poetry — as in the linguistic system — the principal accent is the ultimate pitch. For rhythmic song in the European model, on the other hand, the principal accent is the penultimate stress.

With the division between poetic/linguistic pitch accent and musical stress accent in place, the natural question is: Which of the two exerts the stronger influence on the development of the language? Linguists would probably assume that linguistic systems as found in poetry would be the stronger, and "nonlinguistic" systems as found in music would be subordinate.

## *The New Rules of Syllable Deletion*

Developments in the Modern Welsh accentuation system, however, appear to indicate a more complicated situation. That something is happening quite contrary to linguistic expectations can be seen in a major change to the rules for syllable deletion.

Traditionally, syllable deletion has affected the initial syllable of a disyllabic word. Thus, for example, Jones notes that "in some cases in normal colloquial use the penultimate is actually lost; this seems to occur in a few disyllables which are weakly stressed as a whole in the sentence-context and in which the vowel of the final syllable is of greater natural sonority than that of the initial syllable: *'to* for *eto* 'yet', *'ma*, *'na*, *'cw* (*'co*) for *yma*, *yna*, *acw* 'here', 'there', 'yonder', *'na* for *dyna* 'there is', 'voilà'. No doubt the frequently higher pitch of the final syllable plays a part in this process" (1949:63).

This pattern of syllable deletion very clearly indicates that the syllable with pitch accent is more prominent than the syllable with stress accent. In each case, the stress accented syllable is deleted and the pitch accented syllable is maintained.

As discussed at length elsewhere (Griffen 1979), however, there is a newer pattern of syllable deletion, one based upon the stress accent pattern and independent of pitch. In this form of syllable deletion, the syllable with the weak tertiary stress is dropped. For example, a word such as *tragywyddol* [tra gɵ wï ðɔl] 'eternal' with a phonological /2 3 1 2/ stress pattern can be realized as [tra gwï ðɔl] with a /3 1 2/ stress pattern.

This new pattern of syllable deletion simply does not fit into the overall patterning of the Welsh language. Indeed, it causes havoc with purely structural approaches to phonological description. In the traditional generative model of phonology, for example, other processes involving stress assignment apply at the underlying level, while this new rule of syllable deletion applies (or reapplies) at the surface. As it interacts with the others, this rule necessitates two separate applications of stress pattern assignment, one at the underlying level and one at the surface level (compare Griffen 1977).

## *Music and Language Change*

The new rule of syllable deletion is contrary to the phonological system of Welsh. Far from being unsystematic, however, it constitutes what one might call an "antisystematic" pattern — a pattern that contradicts the overall functioning of the phonological structure. What could have caused such an inherently antisystematic development in the Welsh language?

The answer to this riddle lies in the date of the change. According to Morris Jones (1913:54), such "shortened forms" occur only rarely in Middle Welsh (and then perhaps only in late Middle Welsh). Considering the apparent universality of the deletion of the most weakly stressed syllable (apparently universal due to the fact that stress seldom fails to coincide with pitch), its rarity in Middle Welsh is somewhat remarkable. Indeed, the phenomenon does not become widespread until the Early Modern Welsh of the sixteenth century.

The ascendancy of the new antisystematic rule, then, corresponds precisely with the advent of European rhythmic song brought to Wales under the Tudors. It is suggested here that the change in the language was caused by the requirement in song for rhythm emphasized by musical instrument to correspond with the stress accent without regard to the linguistically prevalent pitch accent. This new emphasis on stress apparently developed speech habits in which the speakers became more aware both of the emphasis placed on the penult and of the lack of stress on the antepenult.

Indeed, at this very same point in history, another deletion took place — one that was rare but quite indicative of what was going on in the language. In a few disyllables, the final, pitch-accented syllable deleted, yielding, for example, *ond* [ond] 'but' from *onid*, *mynd* [mïnd] 'to go' from *myned* [mɵnɛd], and *tyrd* [tïrd] 'come!' from *tyred* [tɵrɛd] (Morris Jones 1913:55). Clearly, such a development could not have occurred unless the stress accent pattern was viewed as the principal; although to be sure, the traditional rule in which *eto* was realized as *'to* was still very much in effect.

In the traditional rule of syllable deletion, it was the syllable before the primary pitch accent that was deleted, in spite of the fact that the deleted syllable happened to maintain the primary stress. The new rule has come to be applied in basically the same manner as the old rule, except that now the syllable being deleted comes before the primary stress accent, the accent that is emphasized in rhythmic song.

How could song be so influential in the development of a language? Indeed, both song and poetry are of central importance to the Welsh culture. Both are presented in balanced measure in the local, national, and even international song and poetry festivals known in Welsh as the *eisteddfodau*, a term borrowed into the English language as the eisteddfods.

The fact is that song is so important to the Welsh culture that a change in the structure of the song can quite conceivably bring about a change in the structure of the language. On the other hand, poetry is also such an important force in the culture and its language that the extent of the linguistic change is in effect limited to the point that it appears to be antisystematic.

This development has significant implications for other languages as well. Such tone languages as Chinese must also make adjustments in their linguistic patterning to accommodate European rhythmic song, now in ascendancy through popular Western music. Moreover, the French accent pattern is practically identical to that of Old Welsh, and there are parallels in the tradition of song as well. As modern rhythmic musical patterns take an ever firmer grip on Chinese and French popular cultures, one might expect to find changes. Of course, they will not be identical to those in Welsh, with its remarkable disparity between pitch and stress accent patterns. Nonetheless, the Welsh precedent shows that music can be a force potent enough to initiate even an antisystematic change in the very structure of a language.

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# THE DISYLLABIC DIPHTHONGS OF NAMA HOTTENTOT

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The language called "Nama" is the sole surviving member of a group of dialects comprising the Hottentot language, believed to have been widely spoken over the southern tip of Africa before being displaced by successive waves of Bantu and European expansion. The population of several thousand remaining Nama speakers, at present limited to a portion of newly-independent Namibia, is dwindling rapidly due to its replacement by Afrikaans.

Nama has the distinction of being the best studied of the Khoisan phylum of languages with a scholarly tradition going back as far as Leibnitz in the 17th century. Its special attraction has always been its inventory of click sounds, a feature it shares with all other members of the Khoisan phylum and with a few Bantu languages as a result of substantial lexical borrowing at some time after the Bantu incursion into southern Africa. Much of our current understanding of the phonetics of these click sounds we owe to the careful and thorough descriptive work of D. M. Beach in the 1930's, published as The Phonetics of the Hottentot Language (Beach 1938) though scholars before and after Beach have made significant contributions.

Since its phonology seemed to be so well understood, when I began my own researches on Nama in the 1970's, I decided to focus entirely on the grammar, since all existing grammars were pre-structuralist and archaic, even Latin-based in some cases. I soon found, however, that Beach had left several phonological issues unresolved so some parts of his descriptive apparatus were seriously in need of revision, particularly regarding the inter-connected suprasegmental matters of vowel length and tone. I did manage to find a satisfactory way to describe vowel length and tone in Nama and incorporated it in the introductory phonological sketch of my grammar with a minimum of discussion, though it raised several issues in the phonological description of click languages which I thought might be of more general interest.

That the mechanics of sound production in clicks has been of such interest to linguists has perhaps led to the neglect of other aspects of the click languages which may be no less interesting and possibly relatable to the effects of the presence of such sounds in the phonology of the language. In my view, the phonotactics of click languages is at least as interesting as the click sounds themselves, and it is phonotactics which I would like to talk about today as it applies specifically to Nama. I will begin with a preliminary sketch of Nama's phonological inventory.

There is wide agreement that the segmental phonemic system of Nama consists of 32 consonants, including 20 clicks and 12 non-click consonants, and 5 vowels (excluding a few extra sounds found only in borrowed words). The non-click consonants **/p t k ' ts kx s x h m n r/** and vowels **/i e a o u/** present few descriptive problems. The clicks form a symmetrical system combining four influxes, or forward releases of the velaric suction mechanism ( **/ ≠ // !** ) with five effluxes, velar releases of that same closure to the pulmonic air stream ( **k kx ' h n** ) (see Table I). There is less agreement on the tonal system, whose interpretations range from Beach's six contour tones whose domain is the root, to my three register tones whose domain is the vowel or syllabic nasal sonorant. The other suprasegmental element, vowel nasalization, occurs only under very limited phonotactic conditions. Writers before Beach had included vowel length as well, but Beach eliminated it from his description on the grounds that his instrumental measurements found no consistent evidence for it. My own analysis reinterprets what had been described as long vowels as sequences of two identical vowels, leaving the variability which Beach found to the effects of sentence stress and emphasis.

The most striking fact about Nama phonotactics is that the frequently occurring click consonants are always root-initial and almost always word-initial. The only time a click is not word-initial is when it occurs in the second root of a compound word (compound words are relatively frequent). All of the non-click consonants except /r/ may occur in this root-initial position as well, resulting in a total of 31 possible initial consonants. Though Nama uses many suffixes, only the non-click consonants occur in them.

Aside from the root-initial position where Nama deploys virtually all of its consonant inventory, the structure of the remainder of the root is subject to very strict phonotactic constraints, such that the number of possible shapes is quite limited. Please note that I am speaking here of native Nama words and not of the many words borrowed from Bantu languages and Afrikaans, which show much greater variability, as might be expected. Perhaps the best way to discuss this matter is to start with Beach's root classification scheme where he divides

## TABLE I

### NAMA NON-CLICK CONSONANTS

| | | | |
|---|---|---|---|
| p | t | k | ' |
| | ts | kx | |
| | s | x | h |
| m | n | | |
| | r | | |

Note: the symbol ' represents a glottal stop

### NAMA CLICK CONSONANTS

| | Effluxes | | | | |
|---|---|---|---|---|---|
| | Velar Plosive | Velar Affric. | Glottal Plosive | Glottal Affric. | Nasal Reson. |
| Influxes | | | | | |
| Dental Affric. | /k | /x | /' | /h | /n |
| Alveolar Plosive | ≠k | ≠x | ≠' | ≠h | ≠n |
| Retroflex Plosive | !k | !x | !' | !h | !n |
| Lateral Affric. | //k | //x | //' | //h | //n |

Nama roots into five distinct types: Class I roots consisting of a single consonant, Class II with the structure CV, Class III with the structure CVV, Class IV with the structure CVN (with syllabic N), and Class V with the structure CVCV. Table II provides a representative sampling of Nama roots in each of these categories.

The only real flaw I found in this scheme relates to Class II, the CV class. Beach's decision to eliminate the vowel length marks which all previous investigators had placed on certain roots led to the inclusion of many roots in this class which would not otherwise have been there. My own research revealed that many roots appearing to have long vowels were simply cases of Class III CVV roots where the two vowels happened to be identical. If you reassign these roots to Class III, the whole scheme becomes neatly divisibile into two large groups with distinct types of grammatical function: Classes I and II contain only suffixes and grammatical particles (and thus no clicks), while Classes III, IV and V contain all the noun, verb, adjective, and adverb roots of the language, as well as a number of grammatical roots with less purely grammatical meaning, such as demonstratives, post-positions, and auxiliary verbs.

With this revision of Beach's scheme, it became possible to produce the general formula for all of Nama's lexical roots you can see depicted in Table III. The greatest advantage of this scheme is that Beach's six contour tones, which formerly could occur on CV roots, now can be seen to only occur on roots with two nuclei, CVV, CVN, CVCV, allowing the resolution of his contours into a sequence of two register tones in all cases, revealing Nama to be a much less peculiar tone language than had previously been thought. Though tone in Nama is a fascinating topic, it goes beyond the theme of the present paper and will not be discussed further. What I would like to focus on here is the strict patterning to be found in the segmental sequences occurring after the initial consonant.

Consonants in non-initial positions can only occur in roots of Classes IV (CVN) and V (CVCV). Since there are only two nasal consonants, /m/ and /n/, Class IV roots are thus limited to these two possibilities. Less predictably, in Class V roots (CVCV), the second consonant can be only one of four possibilities /p r m n/, representing only the oppositions labial/alveolar and oral/nasal with all other consonantal distinctive features not applicable at this position within the root. Note also that nasalization occurs only in roots of Class III (CVV), roots containing two vowels and no medial consonant. Beach suggests that it might be the result of a lost medial nasal.

## TABLE II

## A SAMPLE OF NAMA ROOTS

### Class I: C

| | |
|---|---|
| -ts | 2°s masc |
| -p | 3°s masc |
| -s | 2/3°s fem |
| -m | 1°du fem inc |
| -n | 3°pl com |

### Class II: CV

| | |
|---|---|
| 'a | pres. copula |
| he | vocative |
| ke | declarative |
| kò | recent past |
| kxa | interrogative |
| ra | progressive |
| ti | direct quote |
| -'i | 3°s indef |
| -pa | applicative |
| -ku | 3°pl masc |
| -ró | diminutive |
| -rà | 3°du fem/com/indef |
| -se | manner adverb |
| -tà | 3°pl com |
| -xà | attributive adj. |

### Class III*: CVV ($V_1=V_2$)
(formerly in Class II)

| | |
|---|---|
| /nii | "other" |
| pèé | "to go away" |
| !naa | "in" |
| hòo | "to find" |
| ≠nùu | "black" |
| hi~i | "to do, make" |
| !kú~u | "to go" |

### Class III: CVV ($V_1 \neq V_2$)

| | |
|---|---|
| 'ai | "on" |
| //'áé(p) | "time" |
| tào(p) | "path" |
| ≠kàú | "healthy" |
| //kóé | "to lie down" |
| !'oá | "to, toward" |
| !kúi(p) | "afternoon" |
| ≠'a~i | "to think" |
| //xá~ú | "to shoot" |
| /nù~i(s) | "spider" |

### Class IV: CVN

| | |
|---|---|
| /nàm | "to love" |
| !hòm(s) | "mountain" |
| ≠'áń | "to know" |
| ≠xoń | "sweet" |

### Class V: CVCV

| | |
|---|---|
| /kiri(p) | "jackal" |
| péré(p) | "bread" |
| tàná(s) | "head" |
| ≠'oro | "narrow" |
| !kùru | "to thunder" |
| /'api | "to rain" |
| xaré | "thin" |
| !káro(p) | "desert" |
| //'árú | "to go home" |
| /xópe | "to beg" |
| kxòpa | "to open" |
| ≠'uni(p) | "worm" |

## TABLE III

## GENERAL FORMULA FOR NAMA ROOTS

$$\overset{T_1}{C_1\ V_1} \left\{ \begin{array}{l} (C_2)\ \overset{T_2}{V_2} \\ \qquad\ N \end{array} \right.$$

$C_1$ = p t k ' s x h ts kx m n /k /' /x /h /n ≠k ≠' ≠x
≠h ≠n //k //' //x //h //n !k !' !x !h !n

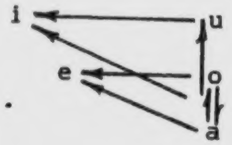
$C_2$ = p r m n

$T_1$ = high mid lòw

$T_2$ = high mid

| $V_1 = V_2$ | $V^1 \neq V_2$ | VN |
|---|---|---|
| ii | ai | am |
| ee | ae | om |
| aa | ao | an |
| oo | au | on |
| uu | oe | |
| | oa | |
| i~i | ui | |
| u~u | | |
| | a~i | |
| | a~u | |
| | u~i | |

Note: There is never a $C_2$ in nasalized sequences.



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The real subject of this paper is, however, the phonotactics of the vowel sequences in native Nama roots, particularly in the roots of Class III (CVV). Since Nama has a five vowel system, if the phonotactics of vowel sequences within roots were unrestricted one would expect a total of 25 possible vowel sequences. In 5 of these permutations, the vowels would be identical /ii ee aa oo uu/ (the former "long" vowels), and in fact all these sequences do occur in Nama. However, of the remaining 20 possible permutations where the vowels would not be identical, only 7 occur /ai ae ao au oe oa ui/.

All writers on Nama before Beach had referred to these combinations as the "diphthongs" of Nama, and differed among themselves only over the question of exactly how many diphthongs there were. On pages 48 and 49 of his book, Beach discusses these "vowel combinations," as he calls them, and argues that none of them are, in fact, diphthongs. Since there is by no means universal agreement on what constitutes a diphthong, it might be helpful to reproduce here the definition (conveniently) given by Beach: "A diphthong is a vowel phone in pronouncing which one or more vocal organs are made to change their position in one direction without forming two syllables." (Beach 1938:49) Leaving aside the obvious question of when it is we are dealing with one phone or a sequence of two phones, one can extract from this definition that, for Beach at least, unity of direction and syllabicity are the diagnostic criteria for deciding whether a moving vocalic articulation constitutes one diphthong or a cluster of two vowels. In the light of this definition, he is quite categorical in stating that the two vowels in these Nama vowel combinations are separate syllables and therefore the sequences should under no circumstances be considered diphthongs.

An examination of the general diagram for the structure of the Nama root in Table III would make it appear that I fully accept Beach's interpretation, since in that diagram the only difference between the Class III (CVV) roots and the Class V (CVCV) roots is the absence or presence of the medial consonant, so that if the two vowels of the Class V roots are separate vowels, then those of the Class III roots must be as well. This general formula actually implies an even stronger rejection of the diphthong interpretation than the argument provided by Beach, since it is based on phonotactic regularities and so avoids the problematic notion of "syllable." It is, indeed, primarily from the phonotactic perspective that the diphthongal interpretation of these sequences appears most untenable. The only unfortunate thing is that the rejection of the diphthong interpretation is very much at odds with the phonetic facts. Let me explain.

First of all, by no means is it the case that the individual vowels in all of these combinations are pronounced as distinct syllables. Though phoneticians are bound to differ among themselves over the question of whether they hear one syllable or two in any particular instance, three of the combinations, namely **/ai au ui/** are, in my observation, never pronounced in a disyllabic fashion and are typically equal in length to single vowels. In the case of the other four **/ae ao oe oa/**, the sequences are pronounced longer and could be judged as phonetically disyllabic by some phoneticians, but probably not by all. Many writers on Nama before Beach placed a dieresis over the second vowel in /ae/ and /ao/ to indicate this extra length, though they never did so in the case of /oa/.

Perhaps the most striking evidence of the monosyllabic nature of /ai/ and /au/ is the fact that glide shortening invariably occurs in these, the two glides which involve the greatest tongue displacement. The first vowel is invariably reduced to a caret or schwa, much like the "raising" that occurs on similar combinations in certain dialects of English. Writers on Nama before Beach almost always transcribed these sequences as "ei" and "ou" to reflect this phonetic reality. Beach clearly departed from this tradition for systematic, rather than phonetic, reasons. The cause of glide shortening in languages where it occurs is usually the rapidity with which the sequence is produced, which is probably the case here.

The second piece of phonetic evidence which militates against the vowel cluster interpretation has to do with the criterion of unity of direction, which also figures in Beach's definition. Though Beach probably meant by this that true diphthongs never change direction in the course of their articulation, it is a rather remarkable fact that the only vowel sequences permissible in Class III roots in Nama are those which glide either upward or forward, thus conforming to a directional pattern common to many languages containing true diphthongs (see the bottom of Table III). Why a language that appears to be concatenating two independent vowels would place a phonotactic restriction on them that would give them one of the common characteristics of true diphthongs is perhaps the most intriguing puzzle in Nama phonology. It must be mentioned at this point that the sequence /oa/, which appears to glide downward, and the sequence /ao/, which appears to glide backward, in actual pronunciation amount to just the removal or addition of lip rounding, with a steady tongue position between the positions of [a] and [o] for both.

The mystery deepens when we consider that the same phonotactic restrictions that apply to Class III (CVV) roots apply to Class V (CVCV) roots as well. There is really no way one could argue that the vowel sequences in such roots are diphthongs in the sense in which we have traditionally viewed them, given that the vocalic movement appears to be interrupted by a consonantal articulation. We might take into consideration that the medial consonants are often very weakly articulated, i.e., the /r/ is often a rapid tap and the /p/ always voiced and often spirantalized (for that reason often transcribed as "w" by some earlier writers), while the /m/ and /n/ are merely the same articulations with a velic opening. Even though we may look upon them as "minimal" consonants, they definitely get in the way of a diphthongal interpretation. Could we possibly argue that some of the articulatory forces operative in the formation of diphthongs may in some cases operate across consonants -- a sort of gliding version of vowel harmony? Or could it be that what seem to be disyllabic root structures in Nama are actually single prosodic units, oversize bi-partite syllables much the way the clicks are oversize bi-partite consonants?

Thus it seems that the phonetic evidence contradicts the conclusions that both Beach and myself reached about these sequences upon phonological systemic grounds. Oddly enough, the strongest evidence against the vowel cluster interpretation is, in fact, systemic. Because of its relatively simple word structure, Nama has few morphophonemic rules. Most of the rules it has, however, apply when its single case suffix -**à** is added to suffixes indicating person, gender, and number which end in a vowel. In every case where this suffix comes into contact with a vowel, a rule operates to prevent the formation of a sequence of two vowels, either by eliminating the first vowel and transferring the tone of the -**à** to it, by substituting a vowel with a quality between the two, e.g., /**ia**/ becomes /**e**/, or by converting the first vowel into a glide, e.g., /**ua**/ is pronounced [**wa**]. By whatever means, the morphophonemics of Nama operates consistently to prevent sequences of two vowels from occurring. Yet such a thing never happens within the Class III (CVV) roots; if we say that these roots contain clusters of two vowels, then this is the only situation in the language where such a phenomenon can occur. How can we argue for vowel clusters in a language which appears to have a systemic bias against them?

The preceding has amounted to the description of a puzzle. If you have followed me so far, you might well be wondering what solution I am going to propose for the problem of the characterization of Nama vowel sequences. The solution I favour is the following:

The vowel sequences which occur in Nama roots are neither diphthongs nor sequences of independent vowels, but rather something else in between. Similarly, the Nama roots are neither single syllables nor sequences of two syllables but something else in between. I would argue that it is only our familiar descriptive apparatus that makes us think we must choose one interpretation or the other; however, if it is only by ignoring some of the phonetic facts that we can make such a choice, then I think it is better to deliberately choose not to make it.

There is perhaps the comforting possibility that the click languages, by possessing a sound production mechanism not found in other languages, may be shaped by articulatory forces that do not operate elsewhere. A tongue which has just finished producing a click sound may well be subject to the after-effects of muscular exertions of a magnitude and direction unknown to any other articulatory task; many of the peculiarities of the sound sequences that follow may be consequences of this effect. The directional characteristics of Nama vowel sequences may be connected with the rarity of front vowels immediately following clicks; perhaps the laminal raising necessary to articulate a front vowel is difficult after the blade has snapped downward for the influx of a click. Perhaps the weakening of medial consonants has something to do with a temporary fatigue arising from click production, or perhaps it is an effect of the large number of distinctions possible at the beginning of a root as a consequence of the large click inventory. Each of these suggestions has its attractions, but each is weakened by the fact that the phonotactics of Nama roots apply as well to roots beginning with one or another of the non-click consonants. The only way I can make sense of the situation is to view the phonology of Nama roots as dominated by the click sounds, with the non-click consonants playing a peripheral role. Those same non-click consonants, it must be remembered, dominate entirely the morphemes of Beach's Classes I and II -- the particles and suffixes essential to the grammar of the language. It might even be feasible to look upon Nama as having two phonological systems, an unusual click-dominated one operating within its lexical roots, and a more ordinary one in its grammatical particles and suffixes.

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# SPANISH STRATEGIES FOR AVOIDING HIATUS

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> "We are convinced that students' pronunciation depends on factors largely outside the instructors' control."
> (Terrell et al. 1990:viii)

## 0. INTRODUCTION

What is usually called SINALEFA in Hispanic studies covers hiatus-destroying processes which affect an unstressed vowel next to another vowel across a word boundary (e.g. *para aprender* 'in order to learn', *símbolo universal* 'universal symbol', *otro edificio* 'another building'), in the everyday speech of all dialects. It is a topic which gets less attention among linguists than it merits, as texts of Spanish for foreigners typically focus more on morphosyntactic aspects of the language than on pronunciation, glossing over sandhi phenomena. This deficit is sometimes pedagogically deliberate, as reflected in the epigraph above, taken from methodologists following a version of the currently fashionable 'communicative competence' model of foreign language instruction.[1]

But the truth is that anti-hiatal strategies play an important role in determining how Spanish sounds,[2] and the short shrift given them in pronunciation guidelines presented to students compromises their chances of developing a natural pronunciation.[3] The present study attempts to rescue *sinalefa* from the oblivion to which it is often relegated by authors of texts on Spanish language and linguistics, and to present a practical synthesis of the relevant processes and related questions.[4]

These sandhi phenomena show considerable dialect variation, but this is no reason for pedagogy to avoid them. In fact, all facets of Spanish evidence variation, both horizontal (from one geographic region to another) and vertical (depending on socioeconomic class), but this has not impeded the writing of texts which seek to impart a normative version of the language.[5] The present study attempts to clarify the phenomena in question, and to facilitate their incorporation into texts and curricula.

## 1. *SINALEFA*

A notable characteristic of spoken Spanish is its general rejection of hiatus (the juxtaposition of two full vowels) between words. While vowel sequences are tolerated word-internally (there are three vowels together in e.g. *creía* 'I believed'), hiatus across a word boundary is typically destroyed by the phonological processes of MERGING or DROPPING, each of which eliminates one of the vowels, or by GLIDING, which removes a vowel's syllabicity, thus changing it into a glide. Let us examine each case in turn.

## 2. MERGING

In this type of *sinalefa*, the two vowels in contact are identical, as in e.g. *para abrir* 'in order to open' or *triste elogio* 'sad elegy', and the second merges with the first to form one vowel: [paraƀrír, tristelóxyo].[6] In order for Merging to go through, the second vowel must be unstressed. If it is not, then hiatus is essentially maintained in the form of a long or geminate vowel: *triste época* [tristeépoka] 'sad epoch'; *esa aguila* [esaágila] 'that eagle'.

Recall that the input representations in question are phonemic rather than phonetic. While any word in isolation may be spoken with heavy stress, words joined in speech form a 'phonological phrase' (or breath group: sounds occurring between pauses), characterized in Spanish by a single main stress towards the phrase's end. Accordingly, our analysis assumes a Stress-reduction rule (exemplified in the derivations below) that erases all phonemic stresses in the phonological phrase, save the rightmost.[7]

Consider the sample phrases *crío ostras and crío ostras mejicanas* 'I raise (Mexican) oysters'. The Spanish-speaker does not effect Merging in either one ([krioóstras], [krioostrazmexikánas]), despite the fact that in the latter, the second [o] is phonetically unstressed, due to the late rule of phrasal stress-reduction. The pronunciation rules of a language apply, after all, to representations more abstract than phonetic ones. The phonemic transcription for the phrases in question, /krío#óstras/ and /krío#óstras#mexikánas/ (where '#' marks word boundary), reveals why there is no Merging: in both phrases, the repeated vowel is phonemically tonic, a violation of the conditions on the application of this rule.

To clarify matters, we present in (3) relevant portions of the derivations of *para abrir*, *triste elogio* and *crío ostras*[8]. (2) provides additional examples of juxtaposed identical vowels in separate words; there is Merging in the left column, but not in the right one. (1) makes explicit (informally) the process of Merging.

(1) MERGING: Between words, the second of two identical vowels, if it is unstressed, merges with the first.

(2)

| MERGING | | NO MERGING | |
|---|---|---|---|
| *mi idolatría* | [miđolatría] | *casi íntima* | [kasiín̪tima] |
| *de estado* | [destáđo] | *de ética* | [deétika] |
| *lo ordenó* | [lorđenó] | *veo ocho* | [beoóčo] |
| *una actriz* | [unaktrís] | *casa amplia* | [kasaámplya] |
| *volví inspirado* | [bolƀinspiráđo] | *perdí ímpetu* | [perđiímpetu] |
| *bambú uniforme* | [bambunifórme] | *bambú único* | [bambuúniko] |

| | |
|---|---|
| 'my idolatry | almost intimate |
| of state | of ethics |
| he ordered it | I see eight |
| an actress | wide house |
| I returned inspired | I lost impetus |
| uniform bamboo | unique bamboo' |

| (3) | /para#abrír/ | ·/tríste#elóxyo/ | /krío#óstras/ |
|---|---|---|---|
| (other rules) | ƀ | | |
| Merging | < | < | |
| Stress Reduction | | \| | \| |
| | [paraƀrír] | [tristelóxyo] | [krioóstras] |

### 3. DROPPING

This second manifestation of *sinalefa* also involves the elimination of one of two vowels across a word boundary. But this time it is the first vowel which drops, when it is not identical to its neighbor, provided it is a mid vowel preceding a high vowel. Both must also be stressless, and agree in anteriority. In other words, in the Spanish five-vowel system, Dropping applies to *e* before *i*, and to *o* before *u*. See examples in (5) of the application of this rule,[9] formulated in (4); (6) presents exemplary derivations.[10]

(4) DROPPING: Drop a mid vowel before a high vowel across a word boundary, if both are stressless and agree in frontness.

| (5) DROPPING | | NO DROPPING | |
|---|---|---|---|
| *otro utensilio* | [otrutensílyo] | *otro invierno* | [otroymbyérno] |
| *siete italianos* | [syetitalyános] | *príncipe único* | [prinsipęúniko] |
| *clase imaginaria* | [klasimaxinárya] | *se utiliza* | [sewtilísa] |
| *puso ultimátum* | [pusultimátun] | *puso ejemplo* | [pusǫexémplo] |
| 'another utensil | | another winter | |
| seven Italians | | unique prince | |
| imaginary class | | it is used | |
| he set an ultimatum | | he set an example' | |

| (6) | /kláse#imaxinárya/ | /otro#unibérso/ | /pwénte#italyáno/ |
|---|---|---|---|
| (other rules) | | ƀ | ŋ |
| Dropping | ø | ø | ø |
| Stress Reduction | a | | e |
| | [klasimaxinárya] | [otruniƀérso] | [pweŋtitalyáno] |
| | | 'another universe' | 'Italian bridge' |

### 4. GLIDING

Just as *sinalefa* includes the three processes of Merging, Dropping and Gliding, this latter rule consists in turn of three subparts. All have a common goal of changing an unstressed vowel into a glide, but they differ in their conditions of application. The first part (7.1) of Gliding[11] is limited to the high vowels *i* and *u*. (8) exemplifies its operation, while (9) offers relevant derivations.

(7.1) GLIDING (first case): A high, unstressed vowel becomes a glide next to another vowel.

| (8) | WITH GLIDING$_1$ |  | WITHOUT GLIDING$_1$ |
|---|---|---|---|
| *su hermano* | [swermáno] | *tabú estético* | [tabue̯stétiko] |
| *casi unidos* | [kasyuníðos] | *su universalidad* | [suniβersaliðáð] |
| *misma historia* | [mizmaystórya] | *colibrí útil* | [koliβriútil] |
| *tema insólito* | [temaynsólito] | *tema audaz* | [temawðás] |

|  |  |
|---|---|
| 'his brother | esthetic taboo |
| almost united | its universality |
| same story | useful hummingbird |
| unheard-of topic | daring topic' |

| (9) | /su#ermáno/ | /mísma#istórya/ | /kasi#unídos/ |
|---|---|---|---|
| (other rules) |  | z | ð |
| Gliding$_1$ | w | y | y |
| Stress Reduction |  | i |  |
|  | [swermáno] | [mizmaystórya] | [kasyuníðos] |

Note that if both vowels are high, as in *casi unidos*, it is the one on the left which undergoes Gliding (due to the universal preference for rising diphthongs over falling diphthongs). Note also that (7.1) is formulated so as to permit application within words as well as across word boundaries. ((7.1) is unique in this respect among the rules of *sinalefa* presented here.)

The remaining parts of Gliding are more general: they apply to any of the five vowels —but they respect the condition of applying only across word boundary. The second part glides any unstressed vowel following a stressed vowel (in another word), e.g. the first [e] in *allá en el campo* [ayae̯nelkámpo] 'there in the countryside'. The rule is formulated in (7.2); there are more examples in (10), and it is seen at work in the derivations of (11).

(7.2) GLIDING (second case): An unstressed vowel following a stressed vowel in another word becomes a glide.

| (10) | WITH GLIDING$_2$ |  | WITHOUT GLIDING$_2$ |
|---|---|---|---|
| *café africano* | [kafea̯frikáno] | *café extraño* | [kafestráño] |
| *habló español* | [aβloe̯spañól] | *compró ése* | [komproése] |
| *busqué oficio* | [buskeo̯físyo] | *busque oficio* | [buske̯ofísyo] |
| *viví aparte* | [biβia̯párte] | *casi aparte* | [kasyapárte] |

|  |  |
|---|---|
| 'African coffee | strange coffee |
| he spoke Spanish | he bought that one |
| I looked for an occupation | look for an occupation! |
| I lived separately | almost separate' |

| (11) | /komí#apárte/ | /buské#ofísyo/ | /kursó#alemán/ |
|---|---|---|---|
| Gliding$_2$ | a̯ | o̯ | a̯ |
| Stress Reduction | i | e | o |
|  | [komia̯párte] | [buskeo̯físyo] | [kursoa̯lemán] |
|  | 'I ate separately' |  | 'she took German' |

Part three of Gliding is more general still, since it applies to any vowel before any other (in a different word): *otro hijo* [otro̯íxo]. We express it in (7.3) and exemplify it in (12); (13) shows some derivations.

(7.3) GLIDING (third case): An unstressed vowel becomes a glide preceding a vowel of another word.

(12) WITH GLIDING$_3$ WITHOUT GLIDING$_3$

| | | | |
|---|---|---|---|
| *ocho años* | [oččo̯áños] | *ocho oraciones* | [očorasyónes] |
| *la única* | [la̯únika] | *sofá usado* | [sofawsádo] |
| *come otra* | [kome̯ótra] | *come espinacas* | [komespinákas] |
| *doce hijos* | [dose̯íxos] | *tabú íntimo* | [tabuín̪timo] |

| | |
|---|---|
| 'eight years | eight sentences |
| the only one | used sofa |
| he eats another one | he eats spinach |
| twelve sons | intimate taboo' |

| (13) | /dóse#íxos/ | /óčo#áños/ | /la#única/ |
|---|---|---|---|
| Gliding$_3$ | e̯ | o̯ | a̯ |
| Stress Reduction | o | o | |
| | [dose̯íxos] | [očo̯áños] | [la̯única] |

In order to highlight the essential similarity of the three subparts of the Gliding rule —the fact that all involve conversion of a vowel to a glide (under various conditions)— we offer in (7) a summary version which combines the rules originally separated as (7.1, 7.2, 7.3); as usual, the subparts apply in the order in which they appear.

(7) GLIDING: An unstressed vowel becomes a glide if it:
1) is high and adjacent to another vowel;
2) follows a stressed vowel in another word;
3) precedes a vowel in another word.

## 5. DIPHTHONGS

The Gliding rule is obviously involved in the creation of diphthongs: where two full vowels previously stood, Gliding produces either vowel plus glide (*cursó alemán* [kursoa̯lemán]) 'he took German' or glide plus vowel (*curso alemán* [kurso̯alemán] 'German course'). But the Gliding rule is hardly responsible for all Spanish diphthongs, which have at least two other sources.

One is the Diphthongization rule *per se* (see e.g. Harris 1977, 1985), which accounts for the alternation between simple vowel and diphthong in cases like *pensar/pienso* 'to think/I think' ([e/ye]) and *contar/cuento* 'to tell/story' ([o/we]); where one segment alternates with two. Gliding, in contrast, concerns vowel/glide alternations ([i/y, u/w, a/a̯, ...]); it contributes only the glide part of the diphthong in question; it changes the manner of articulation of a single sound.

Another source for diphthongs is the underlying form itself. Such is the case when the diphthong does not alternate with other sounds in other words formed from the same root; e.g. *siesta* [syésta] 'nap' and *frecuente* [frekwén̪te] 'frequent'. Such diphthongs remain invariable in all related words: *siestón, siestar; frecuentar, frecuencia* 'napper, to nap; to frequent, frequency'.

## 6. OTHER VIEWS

We here offer a glimpse at the information on *sinalefa* (Merging, Dropping and Gliding) presented in several modern studies, in order to give an idea of how heterogeneous their descriptions and analyses are.[12]

(A) Quilis y Fernández (1975:150-151) properly define *sinalefa* as "...the pronunciation in just one syllable of groups of vowels resulting from the linking of words with each other in the chain of speech...".[13] But neither their explanations nor their examples indicate how this syllabic reduction is achieved (they state no rules), nor do they offer any phonetic transcription of their examples. They cite cases such as *me alegro* 'I'm glad', *la escuela* 'the school', *poco efecto* 'little effect' without explaining which of the vowels in contact is modified, or to what phonetic effect. As for when *sinalefa* happens, they merely observe that "...it may occur in a great variety of combinations, with or without accent...". Such a lack of concreteness limits their description's usefulness.

(B) Cressey (1978:80-81) presents an explicit Gliding rule: an unstressed vowel loses its syllabicity in contact with another vowel. He formulates his rule as variable, with application dependent on vowel height and type of intervening boundary. He makes no mention of Merging or Dropping of adjacent vowels.

(C) Dalbor (1980:182-186) offers a taxonomy of "vowel combinations" and accompanies his examples with phonetic transcriptions. He distinguishes "fused" vowels (those "...forming a diphthong or a cluster of two vowels that go in one single syllable...": *me imagino* [meymaxíno] 'I imagine', *tome usted* [tomewstéð] 'here, take' (although, according to Dalbor, only high vowels show such behavior); and "eliminated": *la abriré* [laβriré] 'I'll open it', *me imagino* [mimaxíno] 'I imagine', *lo único* [lúniko] 'the only thing'. But the rules accompanying these transcriptions are mere surface summaries of allophonic distribution of autonomous phonemes, a gratuitous complication: ten intricate 'rules' and spurious categories of "linked" and "replaced" vowels, unrelated to the three basic processes of Merging, Dropping and Gliding.

(D) Barrutia and Terrell (1982:85-87) adequately describe the "reduction of two identical vowels" (Merging), but erroneously characterize as "Diphthongization" the gliding of a high, stressless vowel in contact with a vowel in another word, e.g. as in *casi allí* 'almost there', *he iniciado* 'I have initiated'. They include mention of a process of "elimination" (Dropping) of /a/ before another vowel, (*la insistencia* 'the insistence'), of /e/ before /i/ (*le invité* 'I invited him') and of /o/ before /u/ (*lo unieron* 'they united it'); but in none of these cases do they provide a phonetic transcription, nor do they specify the phenomenon in question via an explicit rule.[14]

(E) Whitley (1986) makes reference to Merging (27) and to Gliding (25-27; 48). The latter (a less formal version of Cressey's variable rule) is limited to high vowels —although Whitley himself gives examples of non-high vowels also undergoing it. He furthermore describes Dropping as an alternative to Gliding in identical contexts, which permits variations of the sort [la̯orkésta, lorkésta] and [lawnyón, lunyón] for *la orquesta* and *la unión* 'orchestra, union'.[15]

(F) D'Introno, Guitart and Zamora (1988:141-143) deal with *sinalefa* under the rubric of "syllable reduction": "...fewer syllables at the phonetic level than at the underlying level..."; they do not explicitly distinguish between word-internal phenomena and those which affect adjoining words. They offer a rule of "Gliding" for high vowels "[vowel, high unstressed] —> [glide] / before or after a vowel", and admit that mid vowels, too, "...glide when they are unstressed and are in contact with a non-high vowel...especially if the latter is stressed...", but they state categorically that ".../a/ does not glide...". They point to a Dropping process which allows any vowel to drop before another high, stressed one, e.g. *esa hija* [esíxa] 'that daughter'.[16] They also have a variable Merging rule (which "...is more apt to apply if the second segment is stressless").

(G) Azevedo (1992:78-79) alludes to Merging, although only word-internal cases, e.g. *alcohol* [alkól] 'alcohol'. As for Gliding and Diphthongization, he freely mixes intra- and inter-word examples. He reserves the term "*sinalefa*" for the gliding of non-high vowels, a process presented as unrelated to the gliding of high vowels. He characterizes /e/—>[i]—>[y] and /o/—>[u]—>[w] as "raising and diphthongization[17]" (exemplified in *se aman* [syáman] 'they love each other'), whereas the second step instead represents Gliding (a term which Azevedo does not use) of high vowels. His description does not include gliding of /a/, or any Dropping.

## 7. SUMMARY

As a guide for the English speaker anxious to improve her or his pronunciation in this area, the materials reviewed in the previous section are problematic. Some (A, D) offer no transcriptions to concretize the phenomena which they attempt to describe, nor do they frame them specifically as pronunciation rules. Another formulates the description in terms of a framework which does not allow the most useful generalizations to be stated (C). One process is confused with another (e.g. Gliding and Diphthongization) (D, G), and relevant rules are left unmentioned (B, G).

Besides the lack of consensus in terminology on this subject, ("*sinalefa*" (A, G), "*sinéresis*" (E), "vowel combinations" (C), "vowel reduction" (F)), there is sparse agreement on the relevant data: does /a/ glide (B, D?, E?) or not (C, F, G)? Is there more than one pronunciation option in certain contexts (B, C, D, E, G), or do *sinalefa* rules not overlap in their application (F?)? To what extent and in what cases are *sinalefa* rules best formulated as variable? To what extent and in what cases are they also attested within word boundaries?

The imprecision and confusion found in the studies surveyed here cannot but have a negative effect on the student in search of practical and realistic guidelines in pronunciation. The analysis proposed in the present study (§1-5), based on a few relatively classical, complete and explicit descriptions (see note 4), attempts to extract and refine basic *sinalefa* rules useful to students wishing to achieve a more natural pronunciation. It does not reproduce the exact system used in any specific dialect, but selects and combines elements into a rational scheme which methodologists might adopt as the basis for more effective presentation and eventual assimilation.

Although the present study's focus is thus mainly pedagogical, there is obviously a need for more descriptive work on *sinalefa*. Data collection must be more systematic, always accompanied by a clear indication of dialectological source, and should state whether the relevant processes are variable, spelling out the factors involved. Likewise, questions arise for theoretical and instrumental research, such as: Is there a difference between a glide and a shortened vowel? When two vowels combine into a single syllable, are one or both sounds modified, and how? What implications does such research have for linguistic universals?

In the meantime, something certainly can be done to improve the training of our students (especially the more advanced ones) in this key area of Spanish pronunciation. The synthesis proposed here is an effort in that direction.

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■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■

## ENDNOTES

[1] Nevertheless, another study by the same principal investigator (Terrell 1989:209) proposes that "...[explicit] instruction [in the sound system of the target language] at various stages of language acquisition will be beneficial for many learners." That study comments on and analyzes a large number of pronunciation problems confronting the English speaker learning Spanish, but omits any reference to *sinalefa* phenomena.

[2] According to Quilis and Fernández (1975:151), *sinalefa* is "...an important feature of normal, everyday Spanish...". For Barrutia and Terrell (1982:85), "...it is one of the features that cause the most problems in the comprehension of Spanish by beginners...". Whitley (1986:49) states that "...these processes are extremely common in the spoken language throughout the Hispanic world; they increasingly affect even the most formal styles...". Harris (1989:147) assures us that "The historical record leaves no doubt that such a process [i.e. *sinalefa*] has been a natural and pervasive phenomenon of Spanish since time immemorial."

[3] Besides being unaware of *sinalefa*, the English speaker often carries into Spanish the mother-tongue habit of inserting a glottal stop [ʔ] before vowel-initial words, which produces such infelicities as [fweʔalʔotroʔotél] (*fue al otro hotel* 'she went to the other hotel'). So a precondition to adopting *sinalefa* for most speakers is the suppression of this intrusive consonant.

[4] This synthesis is based on three of the most explicit studies of the early generativist literature on Spanish: those of Stockwell and Bowen (1965), of Contreras (1969) and of Harris (1970). Many of the data cited in the present study come from these sources; the others are consistent with them. (It goes without saying that all are subject to (dis)confirmation in the empirical investigation of specific dialects.) The Stockwell and Bowen study (like the present article) attempts to cover

Spanish in general; the Contreras and Harris analyses focus on Chilean and Mexican varieties, respectively. This synthesis is a revision of portions of Klein (1992).

In recent years, *sinalefa* has been attracting the attention of phonologists exploring metrical and autosegmental frameworks (see e.g. Harris 1989, Roca 1992 and the references cited therein). The present study does not attempt to present preliminary results from this new theoretical field, but rather to review basic facts in terms accessible to most teachers and students of advanced Spanish.

[5] The present author shares Roca's (1992, note 12) opinion in this regard: "Practically all the facts of syllabicity between adjacent vocoids in Spanish are heavily dialect-dependent... Confronted with this fact, the researcher has a number of alternatives. First, he can abandon the enterprise as hopeless. Second, he can adopt the data which have been reported in the literature. If so, however, he will face a further choice, since these data will almost certainly not be isomorphic with each other. Third, he can survey and analyse all the dialects of Spanish. Fourth, he can try to create an abstract, internally consistent superdialect... Ideally, the fourth alternative is to be preferred, since it would by definition be the simplest one consistent with all varieties of Spanish." This fourth alternative is the one adopted in the present study.

[6] I follow a modified IPA transcription typical of North American Hispanists, which includes: high glides as [y w], or a crescent below vowel shows loss of syllabicity: [a̯ e̯ i̯ o̯ u̯];
voiceless and voiced palatal affricates: [ č ǧ];
other voiced spirants (labial, dental, palatal, velar): [ƀ đ y ǥ];
labiodental, dental, (pre)palatal, velar nasals: [ɱ n̪ n̠ ñ ŋ];
apical flap and trill: [r r̄].

When pronouncing the examples cited, the reader should bear in mind that *sinalefa* is favored by a relaxed, informal, conversational —and thus, rapid— style of speech. If they are spoken slowly and deliberately, the lack of appropriate stylistic context will introduce distortions in the data.

[7] This is a simplification (which ignores possible non-main stresses) of a phenomenon which emphasizes the rightmost phonemic stress while reducing others, which has been noted by numerous investigators. Contreras (1969, note 2) thus refers to a "...stress adjustment rule which lowers the first stress to secondary" in a sequence of two stressed vowels (e. g. *casa humilde* [kà̲sawmílde] 'humble house'). Dalbor (1980:213) states that "...in virtually every phonemic phrase one of the several primary stresses is louder than the others. Usually this sentence stress coincides with...the last stressed syllable of the phonemic phrase..." Roca (1986:342) says "...the [Spanish] Main Stress rule builds a higher degree of prominence on the rightmost primary stress in the 'phonic group'."

[8] The '<' symbol under a vowel indicates its merger with the vowel to its left.

[9] The crescent under the [o] of *puso* indicates that it is manifested as a glide, through the process of Gliding, as we will see in the next section.

[10] The 'ø' symbolizes the vowel's deletion.

[11] Among the processes of sinalefa analyzed here, this one is unique because it affects not only the vowels which come together between words, but also applies universally to two adjacent vowels within a word, in cases such as *paisaje* [pay̯sáxe] 'countryside' (cf: *país* [paí̯s] 'country').

[12] The comments offered here deal only with *sinalefa*, and must not be taken as an overall evaluation of the works cited.

[13] All translations are my own —PWK.

[14] Their section (115-117) on comparisons with the English vowel system, suffers from the additional defect of ignoring the phoneme (such it is for a great number of English speakers) /ɔ/ found in e.g. *caught* /kɔt/, and in opposition to e.g. /a/ (*cot* /kat/) and /o/ (*coat* /kot/).

[15] Instead of the label '*sinalefa*' for the processes which affect vowels in adjoining words, Whitley characterizes them as '*sinéresis*', a term which, according to Quilis and Fernández (1975:73) is more properly applied to word-internal phenomena.

[16] That is, they claim that *esa hija* is homophonous with *es hija* 'she is a daughter' in rapid speech. It is curious that they deny /a/-Gliding, while at the same time allowing the same vowel's total elimination, since this latter process is the final result of a weakening process which logically and universally would have Gliding as one of its intermediate stages.

[17] Paradoxically, he uses the term 'diphthongization' correctly in other sections of the same text: it is exemplified by "/e/—>[ye], /o/—>[we]" (117); and it "makes a diphthong from a vowel" (295).

# WHAT LURKS UNDER THE RUG?
# A LOOK AT THE NON-EXISTENT PHONEMES OF ENGLISH

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It has customarily been accepted among linguists that English does not mark as phonemic such sounds as glottal stops, nasalized vowels and voiceless nasals. When these do occur in English they are usually regarded as non-phonemic or subphonemic. Furthermore, the usual contention is that such things as clicks, post vocalic [h], and tone do not occur at all. Occasional examples to the contrary are simply swept under the rug. It is generally agreed that since the above sounds do not really form an integral part of the English phonemic system, they can be ignored, and do not have to be dealt with in an accounting of the phonemes of the language. They constitute a bothersome kind of residue that makes us uncomfortable because they conflict with the orderly phonemic patterns that exist elsewhere in the language. We would rather ignore them than deal with the consequences of recognizing their existence.

But the idea of sweeping things under the rug has always been a troubling one, and the number of such items has now grown to the point that they make quite a hazardous lump in the middle of the rug. I finally decided to lift the corner of the rug gingerly to see what lurked beneath, and, like the poet, I cried "up from out of in under there!" To my amazement there emerged a long procession of voiceless nasals, nasalized vowels, glottal stops, postvocalic [h]'s, tones and a plethora of random oddities such as clicks, implosives, velar fricatives, and disembodied intonations uttered without the usually accompanying segmentals. I decided it was time to take these things out from under the rug and put them, instead, on a curio shelf where we can inspect them and wonder over them.

The first discovery was that almost all of them occur most often in interjections. In fact, an examination of English interjections reveals that these utterances follow a very different phonemic pattern from the rest of the language and that they utilize the above sounds to a considerable extent, and almost always in ways that force us to treat them as phonemic.

If we eliminate from consideration exclamations such as "Great!" or "Help!" which consist of words which can enter into longer grammatical constructions, and focus on those interjections which can be used only as single word utterances, we find that the vast majority of them draw from a limited range of sounds. The most frequent of these are nasals (both voiced and voiceless), [h] (both pre-vocalic and post-vocalic), and [ə] (both nasalized and non-nasalized). In fact it appears that interjections employ a phonemic system vastly different from that of the rest of English.

The remainder of the present discussion will be devoted to an examination of what we can learn from the phonemic peculiarities of English interjections.

Looking first at nasals, we find a large number of interjections with a voiced bilabial nasal [m] accompanied by its voiceless counterpart and/or a glottal stop. For example:

| | |
|---|---|
| 1a. [$^{31}$ ʔm̀:] | 'that tastes good'[1] |
| 2a. [$^{14\ 31}$ ʔm:ʔḿm̥] | 'that tastes especially good' |
| 3a. [$^{1\ 13}$ ʔmm̥ḿ] | 'yes' (in answer to a question) |
| 4a. [$^{1\ 31}$ ʔmm̥ḿ(m̥)] | emphatic or surprised 'yes' (often not in answer to a question) |
| 5a. [$^{3\ 1}$ ʔḿʔm̀] | 'no' |
| 6a. [$^{23}$ m̥m] | 'what did you say?' [2] |
| 7a. [$^{31}$ m̥m̀:] | 'I'm thinking about that' |
| 8a. [$^{2}$ m̥mm̥] | scornful laughter |
| 9a. [$^{41}$ m̥mm̥] | 'what do you know about that?; that's interesting' (=surprise) |

---

[1] It appears that, just as with initial vowels, initial syllabic [m] in English is regularly preceded by a glottal stop.

[2] Note that example 6a corresponds to $^{23}$what? 'what did you say?' but not to $^{31}$what? 'give me more information about that; tell me what you want', for which there is no comparable nasal counterpart (cf. example 7a, which follows this latter intonation pattern, but has a different meaning).

| | |
|---|---|
| 10a. [$^{41}$ m̥mʔ] | same as example 9a |
| 11a. [$^{2}$ m̥mʔ] | 'humph' (= disapproval) |
| 12a. [$^{2}$ ʔm:] | 'I'm thinking (of an answer)' |
| 13a. [$^{3}$ ʔm:] | 'I don't think so; I don't agree' |

Most of the above examples can also be pronounced with an alveolar [n] in place of the bilabial [m]. Most also have non-nasal counterparts which keep the [ʔ] but which utilize [h]$^{3}$ in place of the [m̥] and [ə̃] or [ɤ̃] or even [ɯ̃] in place of the voiced [m]. Thus we have:

| | |
|---|---|
| 3b. [$^{1\ 13}$ ʔ ə̃h ə̃́] | 'yes' (in answer to a question) |
| 4b. [$^{1\ 31}$ ʔ ə̃h ə̃́(h)] | emphatic or surprised 'yes' |
| 5b. [$^{3\ 1}$ ʔ ə̃́ʔ ə̃] | 'no' |
| 6b. [$^{23}$ h ə̃] | 'what did you say?' |
| 6c. [$^{13}$ h ə̃] | 'isn't that so?'[4] |
| 7b. [$^{31}$ h ə̃:] | 'I'm thinking about that' |
| 8b. [$^{2}$ h ə̃h] | scornful laughter |
| 9b. [$^{41}$ h ə̃h] | 'what do you know about that?; that's interesting' (=surprise) |
| 10b. [$^{41}$ h ə̃ʔ] | same as example 9b |
| 11b. [$^{2}$ h ə̃ʔ] | 'humph' (= disapproval) |
| 12b. [$^{2}$ ʔ ə̃:] or [$^{2}$ ʔ ə:] | 'I'm thinking of an answer'[5] |

---

[3] This [h] could, of course, be regarded as a voiceless vowel of the same quality as the voiced vowel(s) in the word. This analysis would parallel more closely the voiced/voiceless alternation of the nasals. For ease of presentation, however, I will symbolize them as [h].

[4] As in 'he's here, [$^{13}$ h ə̃] ?' with an intonation pattern different from that of 6b. A nasal counterpart of 6c does occur but is seldom used. This same meaning is represented in most Canadian dialects by [$^{13}$ ʔe] , and both meanings can be indicated in some U.S. dialects by [$^{13}$ ʔ ẽ] .

[5] Note that, with the possible exception of 8b (cf. 26 below), example 12b is the only one of these which can occur either with or without nasalization of the vowel. In addition, both forms of 12b occur also as hesitation phenomena, which 12a does not.

| | |
|---|---|
| 13b. [$^{3}$ ʔ ə̃ː] or [$^{3}$ ʔ ɛ̃ː] | 'I don't think so; I don't agree' |

But note that there are some nasal forms, such as examples 1a and 2a, which have no non-nasal parallel -- there is no *[$^{31}$ʔ ə̃ː] corresponding to [$^{31}$ ʔmː] 'that tastes good', nor is there any *[$^{14\ 31}$ ʔ ə̃ ːʔ ə̃́h] corresponding to [$^{14\ 31}$ ʔmːʔḿm̥] 'that tastes especially good'.

Also there are some vocalic forms that do not have any counterpart containing a nasal consonant. Most of the vowels in these forms are non-nasalized, but there are at least two forms with nasalized [ə̃], namely:

| | |
|---|---|
| 14. [$^{1\ 42}$ ʔ ə̃ h ə̃́ː] | 'yes' in arguing (especially among children) |
| 15. [$^{1\ 42}$ ʔ ə̃ ʔ ə̃́ː] | 'no' in arguing[6] |

Other forms of 'yes' and 'no', in addition to these words themselves, include:[7]

| | |
|---|---|
| 16. [$^{31}$ yæə̯] | 'yes' |
| 17. [$^{13}$ yəp] | 'yes' |
| 18. [$^{13}$ yɛ p] | 'yes' |
| 19. [$^{13}$ yə ʔ] | 'yes' |
| 20. [$^{31}$ næə̯] | 'no' |
| 21. [$^{13}$ nowp] | 'no' |
| 22. [$^{3}$ næː] | a somewhat tentative negative, suggesting 'I don't think so' |

Non-nasalized vowels also often occur in connection with [ʔ] and [h] in such forms as:

---

[6] Note the difference of examples 14 and 15 from examples 3 and 5 in stress position as well as in intonation. Also, although it is conceivable that examples 14 and 15 could be uttered with nasal consonants, the arguing factor seems to demand an open mouth -- even more open than is usual for the normal [$^{1\ 13}$ ʔ ə̃ h ə̃́] of example 3b and [$^{3\ 1}$ ʔ ə̃́ʔ ə̃] of example 5b.

[7] Note the varying intonations on the different ones of these.

| | |
|---|---|
| 23. [$^{3}$ ʔaʔ], [$^{3}$ ʔaʔáʔ] | 'don't do that; watch out' |
| 24. [$^{13}$ ʔa:ʔ] | same as 23, but less urgent, more instructive |
| 25. [$^{31}$ hah] | 'gottcha!'; also as a sign of ridicule |
| 26. [$^{2}$ həh] | disapproval (cf. 8a and 8b above) |
| 27. [$^{2}$ ʔəh] | disgust or annoyance |
| 28. [$^{1\ 31}$ ʔahá(h)] | 'gottcha!' |
| 29. [$^{3\ 2}$ ʔə́ ʔo] | 'oh-oh'--dismay[8] |

A few interjections involve the use of [w] or [y], as in forms such as:

| | |
|---|---|
| 30. [$^{31}$ yəm] | 'that tastes good'[9] |
| 31. [$^{23\ 21}$ yəm yə́m] | same as example 30, but more apt to be said by a child |
| 32. [$^{31}$ waw] | expression of amazement/surprise |
| 33. [$^{31}$ ẉyuw] | 'whew', expression of relief |

There are also a few interjections that include other consonants, for example:

| | |
|---|---|
| 34. [$^{31}$ ʔaw], [$^{31}$ ʔawč] | 'that hurts' |
| 35. [$^{31}$ yək], [$^{31}$ yəx] | expression of disgust |
| 36. [$^{31}$ ʔəg], [$^{31}$ ʔəx] | same as example 35[10] |
| 37. [$^{1}$ də:] | 'that's really stupid!' |

Note in examples 35 and 36 the occurrence of the velar fricative [x] which here is used in a native word as opposed to the

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[8] Simple 'oh' is omitted here because of its great variety of possible intonations and associated meanings.

[9] See example 1a [$^{31}$ ʔm:] with the same meaning.

[10] All the forms in examples 35 and 36 express physical disgust and may even bear a [$^{41}$] intonation pattern in the case of extreme disgust. Compare these with example 27 [$^{2}$ ʔə h] which conveys extreme annoyance.

[χ] of Bach which is commonly dismissed because it occurs in a borrowed word. Also, in example 37, the [d] is often replaced by an implosive, although implosives do not occur elsewhere in English, and the vowel may then be an unrounded back vowel.

There are, in addition, some interjections that consist solely of consonants or solely of vowels (preceded by the usual [ʔ]), as in:

| | |
|---|---|
| 38. [s:] | a sign of disapproval |
| 39. [š$^{w}$:] | 'be quiet'[11] |
| 40. [pst] | 'hey' -- to attract attention |
| 41. [$^{21}$ ʔa:] | expression of contentment |
| 42. [$^{31}$ ʔa:] | sudden insight |
| 43. [$^{31}$ ʔɯ:] | 'yuck' -- as in examples 35 and 36 |

There are even clicks, as in the expression we usually spell tsk or tsk tsk (and sometimes even give the spelling pronunciation [tɪsk tɪsk]) which represents one or two (or sometimes more) apico-alveolar clicks, often uttered with lips protruded, expressing mild disapproval. There is also the lateral click used to tell a horse to "giddyap".

Moreover there is at least one clear example of a disembodied intonation -- it is not really an interjection but it clearly follows the same pattern. When I ask my teenage daughter a question like "Where are you going?" and she answers [$^{1423}$ ə̃:] or [$^{1423}$ m:], I know exactly what she means -- "I don't know", which, if fully enunciated, would have exactly that intonation pattern. The intonation, here, is the full bearer of the meaning, while the vowel or [m] occurs simply as a carrier for the intonation.

As we begin to summarize the implications of these data we find a number of peculiar patterns that seem to occur only in interjections.

First there is the occurrence of sounds that appear nowhere else in English: the clicks, the voiceless velar fricative [χ], the voiceless bilabial nasal [m̥], the labialized [š$^{w}$:], and the implosive [ ɗ ]. In addition, it appears that some, if not all, of these interjections must be treated as having tone rather than intonation. The contrast, for example, between [$^{2}$m:] and [$^{3}$m:] ('I'm thinking' versus 'I don't think so') or between [$^{23}$h ə̃ ] 'what did you say?' and [$^{13}$h ə̃] 'isn't that so?' (as in "He's here, huh?") is clearly one that must be treated as tonal. To say "He's here, [$^{23}$h ə̃ ] ?", for example, would be bizarre, if not incomprehensible.

---

[11] Note the labialization of the sibilant, uttered with lips protruded -- another anomaly in English.

Secondly, we find in these interjections sounds which do occur elsewhere in English but with a totally different distribution. The glottal stop occurs predictably in the rest of English between a pause and a following vowel, but nowhere else. Hence it has been treated as non-phonemic. Yet, in the data under consideration here, its occurrence is clearly contrastive: [$^{31}$ʔḿʔm] 'no' has a different meaning from [$^{31}$ʔm:] 'that tastes good' and both also clearly contrast with [$^{13}$ ʔmm̩ḿ] 'yes'.

While nasalized vowels do occur, but non-contrastively, elsewhere in English, here nasalization must be treated as phonemic: [$^{3\ 1}$ ʔ ə̃́ ʔ ə̃] 'no' or [$^{1\ 13}$ ʔ ə̃ h ə̃́] 'yes' cannot be pronounced *[$^{3\ 1}$ ʔə́ʔə] or *[$^{1\ 13}$ ʔəhə́]. In fact *[$^{3\ 1}$ ʔə́ʔə] is in danger of being misunderstood as [$^{3}$ ʔaʔaʔ] 'don't do that'.

The statement is often made that [h] does not occur post-vocalically in English, yet in the interjections there are several examples of non-optional occurrences -- for example [$^{41}$ h ə̃ h] 'what do you know about that?' cannot be replaced with [$^{41}$h ə̃] without changing the meaning into 'I'm thinking'.

Thirdly, the overall phonological structure of the words is most unusual. Almost all of these interjections either are monosyllabic or else involve some sort of partial or complete reduplication. Most of them contain a nasal consonant or a nasalized vowel. Many contain [h] and/or a glottal stop. And the vowels that occur are almost always [ə] or [a]. The words do not draw on the full repertoire of English phonemes but rather seem to settle on a few sounds which are used to the exclusion of all others.

While "ours is not to reason why", it is tempting to speculate on the reason for the unusual nature of these interjections. One might suggest, if somewhat facetiously, that they could be the remnants of a distant past when our ancestors spoke in a truly primitive language of "grunts" and "groans". Or perhaps they are remnants of our infancy when we had a much more limited capacity for producing distinct consonants and vowels and when, as Roman Jakobson has pointed out, [m] was probably the easiest consonant for us to form. Perhaps, to borrow from Carleton Hodge, they are a sort of *lectio difficilior* and are the most ancient of English sounds.

Be that as it may, we ought to keep these oddities on our curio shelf so that we can take them down and admire them now and then. To quote Hodge, these kinds of things are treasures, not problems. As a number of papers at the present conference have made clear in one way or another, we may be entering an era in our discipline when we have to realize that not everything fits into nice neat systems, when fuzzy sets may turn out to be the norm, and when we can no longer afford to deal with things that make us uncomfortable by sweeping them under the rug.

# BINARITY, PHONETIC REALITY, AND THE BULGARIAN VOWEL

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## 1. INTRODUCTION

### 1.1 The Bulgarian Vowel

The vowels of Bulgarian form a neat system which provides a test case for almost all of the controversial theoretical issues concerning the semiotic relations of phonology that have been argued back and forth over the past fifty or sixty years. These include phonemic contrast, biuniqueness, the size and segmental nature of the phoneme, the archiphoneme, the nature of phonological "rules," the difference between the archiphoneme and the morphophoneme, the minimal specification of phonemes, phonemic features, the prediction of features, and the utility of binary features. Perhaps more importantly, the Bulgarian vowel can shed light on how these concepts are related and on their relative validity. Thus it is surprising that more attention has not been paid to the Bulgarian vowel.

In fact, few articles have been published on the Bulgarian vowel, and most of them focus on the phonetics or on the accented vowels alone (Wood & Petterson 1988, Danchev 1990). This year marks the silver anniversary of the only one that faces the issues of phonological theory directly (Lockwood 1969). Lockwood 1969 is a nearly definitive description of the Bulgarian vowel, as a close analysis shows, and its fate is instructive.

### 1.2 Lockwood 1969

David Lockwood (1969) produced a solid description of the Bulgarian vowel system.[1] His analysis is airtight and his description is couched in the relational network model of stratificational theory. The description itself can be simplified and made more realistic phonetically, but it remains a good description. It is also the last stratificational article published in *Language*.

This fact suggests two questions: 1) How did Lockwood get this article published in *Language*? and 2) Why have all subsequent stratificational submissions been rejected? The hope of solving these mysteries provided a major impetus for the present study.

### 1.3 The Mysteries Studied

I begin this study with the Bulgarian data and proceed to an outline of Lockwood's description. I then analyze Lockwood's description and provide my own.

A comparison between the two gives a hint as to how Lockwood 1969 got published. It also shows an unnecessary theoretical shortcoming shared by Chomskyan theories of phonology which stratificational theory can adopt or reject: binary features. This may be part of the reason for the difficulties stratificational phonology has experienced with *Language*. It is probably not the only reason, but it leads to some interesting speculations.

## 2. THE DATA

### 2.1 Some Examples

A set of examples adapted from Lockwood 1969 is given in table 1.

| A. Stem accent | | | B. End accent | | |
|---|---|---|---|---|---|
| Gloss | | the | Gloss | | the |
| sound | zvúk | zvúkъ[2] | onion | lúk | lukъ́ |
| grape | gróst | grózdъ | bridge | móst | mustъ́ |
| breath | dъ́x | dъ́xъ | oak | dъ́p | dъbъ́ |
| sign | znák | znákъ | voice | glás | glъsъ́ |
| leaf | líst | lístъ | moment | mík | migъ́ |
| lev($) | léf | lévъ | honey | mét | midъ́ |

Table 1

Table 1A has examples from paradigms with word accent fixed on the stem. The examples in table 1B have stem accent in the citation form, but the accent appears on the suffix in the articulated forms.

### 2.2 A Neo-Bloomfieldian Description

In Neo-Bloomfieldian terms, it is easy to define the six vowel phonemes in Bulgarian. They are presented in table 2.

| | Front | | Dorsal | | |
|---|---|---|---|---|---|
| | | | | | Labial |
| High | i | | | | u |
| Mid | | e | ъ | o | |
| Low | | | a | | |

Table 2

The distribution statements are similarly easy. Three vowels, /i/, /ъ/, and /u/, are found in both accented and unaccented syllables. The other three vowels are found only in accented syllables. We can set up morphophonemes *E*, *A*, and *O*. *E* is realized by phonemes /é/ and /i/, *A* by phonemes /á/ and /ъ/, and *O* by phonemes /ó/ and /u/.[3]

### 2.3 A Trubetzkoyan Description

The facts given in section 2.3 remain the same, but a Trubetzkoyan analysis produces one set of phonemes in accented syllables (table 3A) and a set of archiphonemes in unaccented syllables (table 3B).

| A. | Front | Dorsal | | B. | Front | Dorsal | |
|---|---|---|---|---|---|---|---|
| | | | Labial | | | | Labial |
| High | i | | u | | I | | U |
| Mid | e | ъ | o | | | Ъ | |
| Low | | a | | | | | |

Table 3

Only three vocalic contrasts can be established in unaccented syllables. Hence there are only three phonological elements in table 2B. These three elements are archiphonemes rather than phonemes, however, because they realize the suspension of two contrasts each. That is, *I* is the neutralization of unaccented *i* and *e*, *Ъ* of *a* and ъ, and *U* of *o* and *u*.

### 2.4 The Salient Characteristics of Bulgarian Vowels

Several facts stand out from these two descriptions. A maximum of six vocalic contrasts can be established. Only three contrasts can be established in the absence of word accent. There is complete overlap in phonetic form between the three contrasts in unaccented syllables and three of the six contrasts in accented syllables. The alternation is automatic (in terms of Wells 1947) or archiphonemic (in terms of Trubetzkoy 1939). It is predictable on the basis of phonological environment alone. The three vowels in table 3B are the unmarked members of marked-unmarked oppositions, with the three other vowels in table 3A being the marked members of these oppositions.

Lockwood faced the problem of producing a description that incorporates all the observations listed above. I now show how he did it.

## 3. LOCKWOOD'S DESCRIPTION

### 3.1 A Sixties Description

Two preliminary descriptions of Bulgarian vowels are given in table 4. Here I ignore features like Vocalic and Consonantal. Table 4A has a Jakobsonian description, table 4B an SPE description (following page).

From the facts presented in section 2, it is clear that some rule(s) must be added to the matrix descriptions in table 4 to predict the automatic alternation. Otherwise the description will not be complete. The problem is the single environment. The environment must be written separately with each rule it appears in. If it appears in more than one rule, its additional appearances are redundant. Using a single rule would avoid this problem. But restricting the matrix to binary features is incompat-

| A. | i | e | ъ | a | u | o |
|---|---|---|---|---|---|---|
| Grave | - | - | + | + | + | + |
| Flat | 0 | 0 | - | - | + | + |
| Diffuse | + | - | + | - | + | - |
| Compact | 0 | - | 0 | + | 0 | - |

| B. | i | e | ъ | a | u | o |
|---|---|---|---|---|---|---|
| High | + | - | - | 0 | + | - |
| Low | 0 | - | - | + | 0 | - |

Table 4

ible with a single rule, since Bulgarian has three degrees of vowel height. It would be possible to define a single rule if the vowel height feature were polyvalent instead of binary, but the binarity of linguistic features has been axiomatic in Chomskyan phonological theory (C-phon) since its inception. This is perhaps why C-phonologists have ignored Bulgarian completely.

### 3.2 Lockwood's Insights

Lockwood 1969 has two major insights. First, he noted that the neutralizations observed in the Bulgarian vowel involve relative height. That is, the contrast between the higher and lower vowels within each place of articulation is suspended in unaccented syllables. As a consequence, it is necessary to mark only the (relatively) high vowels, as in table 5A, or only the low vowels, as in table 5B.

| A. | Fr | - | Lb | B. | Fr | - | Lb |
|---|---|---|---|---|---|---|---|
| Hi | i | ъ | u | - | i | ъ | u |
| - | e | a | o | Lo | e | a | o |

Table 5

Second, Lockwood rejected the idea of applying some kind of universal marking conventions to the phonology of Bulgarian, irrespective of the language-internal system. The direction of neutralization is in the direction of the higher vowel. This suggests, according to Jakobsonian markedness theory, that the low vowels are marked and the high vowels are unmarked. That is, the feature marking of table 5B is the more appropriate.

This is the description Lockwood chooses. Moreover, he demonstrates (Lockwood 1969:304-307), via a relational network description, that marking low vowels produces a simpler description than marking high vowels (cf. his figures 5 and 6). In addition, he shows that his description is biunique, whereas marking high vowels is not.

For convenience I reproduce Lockwood's figure 6, which is his summary description, as figure 1. I have altered its orientation so that figure 1 can be compared with my description (figure 2). In its essentials figure 1 retains the characteristics of Lockwood's figure 6.

In sum, Lockwood 1969 is a very good description. I now show just how good it is and suggest that its limitations were its strengths, in the view of the editors of *Language*.

## 4. ANALYSIS OF LOCKWOOD 1969

### 4.1 Positive Points

The many positive points of Lockwood 1969 are easily summarized. The description recognizes phonemic contrast. It identifies the six vocalic phonemes of Bulgarian. It identifies their allophones. It has a low number of features per phoneme. It predicts the automatic alternation and integrates it with the rest of the diagram, producing a description which is biunique, and it does so in a simple fashion. It describes the alternation as a single "rule," i.e. as the OR to the right of *Lo* in figure 1. In the process it refutes Halle's claim (1959:21-24) that biunique phonemes (contrast) complicate a theory. It also shows the utility of a relational network description in several ways, one of which is the workable simplicity metric.

Now the track record of *Language* in publishing stratificational articles over the past 25 years is unblemished. But if Lockwood 1969 is such a good stratificational description, then it is not clear why *Language* would have published it. The same editor retained control for years after 1969, so it cannot be merely his choice. My suggestion is that Lockwood 1969 is both an adequate and an inadequate description from a C-phon viewpoint. I consider each conclusion in turn.

### 4.2 Positive (C-Phon) Characteristics

Lockwood's description fits the C-phon mold in several ways. The phonological elements are each characterized directly by a minimal set of phonological features. The output of the phonology is a feature matrix. The three alternations are accounted for by a single rule. The prediction of other features is potentially maximized. Overall, a simple, efficient model of Bulgarian vocalic phonology is provided.

All of the above observations would be characteristic of a good C-phon description of the Bulgarian vowel. However, the description also contains a number of characteristics which are unnecessary in C-phon. I turn to them now.

### 4.3 Negative (C-Phon) Characteristics

It should be understood that the characteristics I am terming "negative" here are negative only from a C-phon viewpoint. But from that mindset they are truly negative, because they detract from its (C-phon) utility. They are not necessarily detrimental from any other viewpoint. Still, the C-phon viewpoint has been numerically dominant, and we should consider its conclusions.

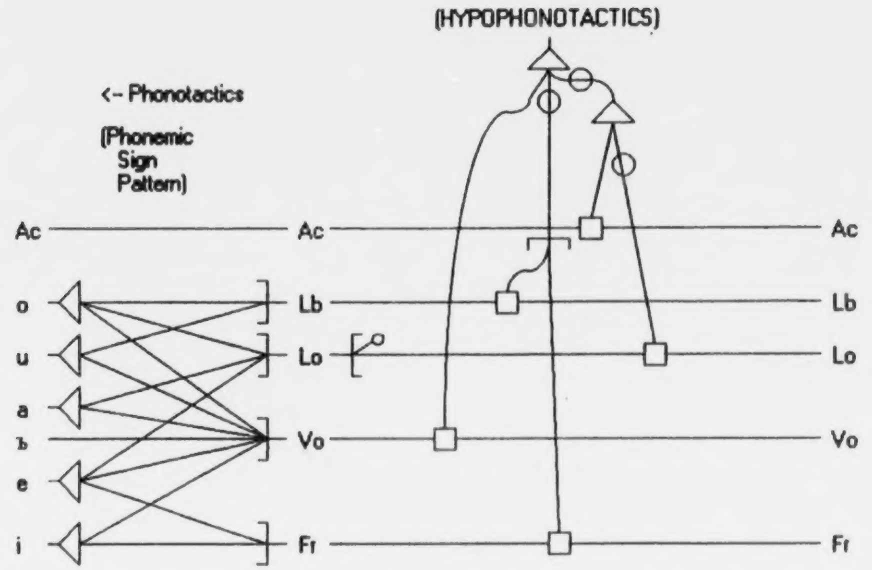
(HYPOPHONOTACTICS)
<-- Phonotactics
(Phonemic Sign Pattern)
Ac
o
u
a
ъ
e
i
Ac
Lb
Lo
Vo
Fr
Ac
Lb
Lo
Vo
Fr

Figure 1: Bulgarian Vowels (Lockwood 1969)

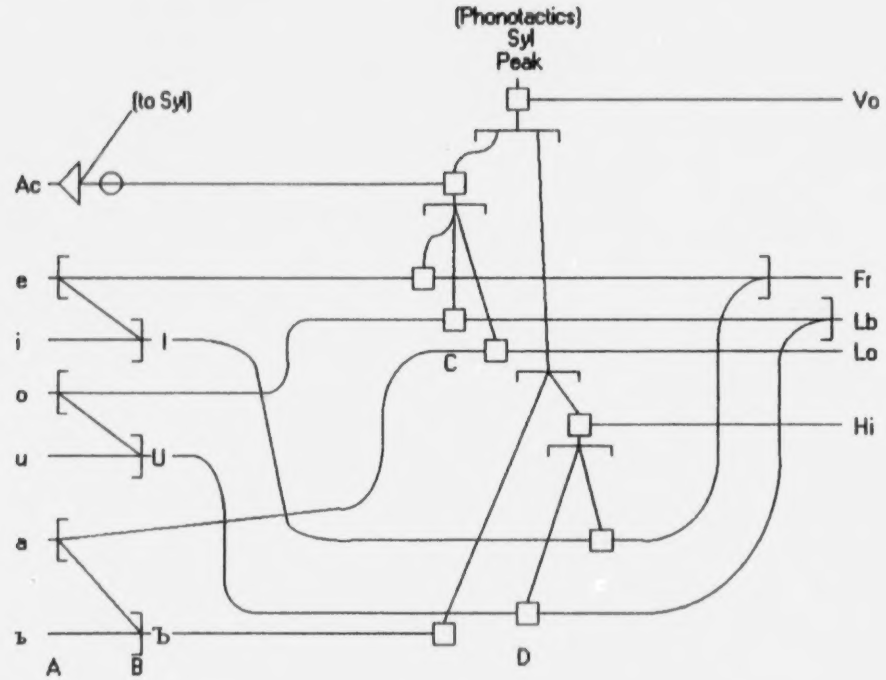
(Phonotactics)
Syl
Peak
Vo
(to Syl)
Ac
e
i
I
o
u
U
a
ъ
ъ
A
B
C
D
Fr
Lb
Lo
Hi

Figure 2: Bulgarian Vowels Redescribed

First, figure 1 has a level of biunique contrast. It was a generally accepted C-phon view in 1969 that Halle (1959:21-24) had proved that biuniqueness was an unnecessary complication to a theory of phonology and that a level of phonemic contrast was unnecessary. No refutation of this unsatisfactory proof has ever been accepted, and there have been a number of good ones (Johns 1969, Sullivan 1974, Lamb & Vanderslice 1976).

Second, Lockwood's description violates the (then) current C-phon belief that the maximally unmarked vowel across languages is *a*. Using a stratificational simplicity metric he shows that a description which treats ъ as the maximally unmarked vowel in Bulgarian is actually simpler than one which treats *a* as the maximally unmarked vowel. The consequence of this is that it makes markedness look like a language-specific phenomenon, when it was presumed to be a universal phenomenon.

Third, while C-phonologists admitted that unnecessary complexity was uninteresting per se, they were never able to adduce a generally acceptable simplicity metric, i.e. one that worked. Nor were they able to suggest a reason for their failure in this matter, though one or two researchers pointed out what the problem was: they didn't know what they should be counting. Moreover, they did not see that the stratificational simplicity metric could have much utility, as it obviously was not applicable to other theoretical models. Worse yet was the generally incomprehensible and totally superfluous relational network notation, which was, in their view, probably the source of these unneeded accretions.

So it turns out that Lockwood's description at its best can parallel a C-phon description. But it brings along a large amount of clearly unneeded and often incorrect baggage. Lockwood 1969 proves that neither Lockwood nor any other stratificationalist could match the descriptive purity of C-phon. Where his description disagrees with a C-phon description it is wrong; where it agrees, it is superfluous.

If we assume that the above comments are reasonable, we can see a good reason for publishing Lockwood 1969 and ignoring all following stratificational submissions. That is, a stratificational description can be good but never as good as a C-phon description. That's the major conclusion that can be drawn from Lockwood 1969, given this mindset.[4]

Lockwood's description can be somewhat improved, however. I turn to that now, beginning with an analysis of its real negative characteristics.

### 4.3 Real Negative Characteristics

Lockwood 1969, good as it is, has two characteristics which are real shortcomings. Without them I believe it would never have been published in *Language*. In order to see these characteristics as shortcomings, however, we will have to look at his description without C-phon presuppositions.

The two shortcomings in Lockwood 1969 result from the binarization of vowel height. Vowel height is treated as a ±Low binary opposition. This and this alone allowed a stratificational treatment of the Bulgarian vowel that has significant parallels to a C-phon description and makes it acceptable to that mindset. In particular, it allows the three alternate realizations to be described by a single "rule". Recall that all three alternations occur in the same environment (unaccented syllables). The only way to avoid stating this environment three times in C-phon is to collapse the three rules into one. This is not necessary in stratificational phonology (S-phon), as the alternations are realizational relations and the environments are described in the tactic patterns. Thus the S-phon quasi-equivalent to a C-phon rule is the connection of an alternate realization to a particular point on the phonotactics. With an OR node, two or more alternate realizations can be connected to the same tactic environment. In figure 1 Lockwood does both: one alternation (Lo alternating with zero) and one environment (Lo occurring only with accent).

This is the first shortcoming: the alternate realizations are three distinct suspensions of contrast. Describing them as a single alternation is misleading. In reality, Lockwood's description does not do this, but it can (mistakenly) be read that way, and I suspect that's the way the *Language* editorial referees read it.

The second shortcoming is that binarity makes the description phonetically unrealistic. *E* and *o* are related to the feature Lo, when they are actually mid vowels. At the same time ъ, which is also a mid vowel, is not related to Lo. Ironically, this may have been viewed as an advantage by C-phonologists, who believed that a theory of phonology need not be phonetically informed. Lockwood is not personally guilty of this lapse; over the years he has given much thought to integrating accurate phonetic detail into a stratificational description of phonolgy. It was merely beyond the scope of his 1969 study.

Both of these shortcomings are easily corrected with a relational network description which is phonetically accurate and which reflects the true nature of the alternations.

## 5. A REDESCRIPTION

### 5.1 The Redescription

My description is given in figure 2. Before listing the consequences of this description, I want to comment on a few general preliminaries. First, in my description I recognize the six contrasts in accented syllables and the three contrasts in unaccented syllables presented in table 3. Second, I recognize that the three contrasts in unaccented syllables represent the suspension of three distinct contrasts. Third, I relate the contrastive elements (i.e. phonemes) to phonemic features in phonetically realistic fashion, though slightly differently from the relations in table 3. A summary of the phoneme-to-feature relations is given 6.

| | A. Accented syllables | | | B. Unaccented syllables | | |
|---|---|---|---|---|---|---|
| | Fr | - | Lb | Fr | - | Lb |
| Hi | i | | u | I | | U |
| - | e | ъ | o | | Ъ | |
| Lo | | a | | | | |

Table 6

There is also a difference between figures 1 and 2 which is purely notational. The phonemic sign pattern in figure 1 can be integrated into the phonotactics. This is a consequence of the mechanical application of the simplification principles enunciated in Reich 1973. The possibility of applying these principles to the phonemic sign pattern were not noticed until just after Lockwood 1969 had been accepted. The resulting simplification is incorporated in figure 2.

### 5.2 The Characteristics of the Redescription

The relational network of figure 2 has a number of characteristics which are typical of the relational network model of cognitive-stratificational theory I use. I list them in order.

1) All contrasts are described directly in those environment(s) where they occur (C and D in the phonotactics [PT]).

2) The description is fully biunique at the level of phonotactic diamonds (C and D). That is, the only upward (left-facing) OR nodes to the right of the phonemic diamonds are there for book-keeping purposes (i.e. Lb = Lb).

3) The environments where contrasts are automatically suspended (or cannot be established) are fully and directly described.

4) The three alternations (A) and the neutralizations (B) are automatic and distinct from each other. They are not the product of a single rule, but at the same time, nothing need be rewritten.

5) The environment of neutralization is given exactly once (the part of PT related to the diamonds at D).

6) Only Fr (front), Lb (labial), and Lo (low) are phonemic features of the Bulgarian vowel in figure 2.[5] Phonemic features are those features with the function of distinguishing between morphemes. They must therefore have relations to the morphology, i.e. leftward.

7) The features Vo and Hi are determined features without direct relations to morphology. They are formal[6] markers that signal a phoneme's hierarchical position in the PT. Thus vowels are related to the feature Vo (vocalic), which signals their relation to syllable peak position, and *i/I* and *u/U* are related to the feature Hi (high), which distinguises them phonetically from *e* and *o*.

8) One vowel, *a*, is phonemically low. Two vowels, *i* and *u*, are redundantly related to Hi. The three mid vowels, *e*, *ъ*, and *o*, are not marked for vowel height at all. Thus the specification of the three vowel heights is phonetically accurate.

9) Each phoneme (the diamonds at C and D) except for *ъ* is directly related to a single phonemic feature. The "size" of a phoneme is a single feature. This is therefore a non-segmental phonology. Moreover, Jakobson,Cherry & Halle 1953 state that the minimal number of distinctive features per phoneme is 2.[7] I reduce that minimum to one.

10) The phonetic output of this phonotactics during encoding is a quasi-stepmatrix or a switch-matrix (cf. Lockwood 1976). The difference between these two characterizations of the phonemic feature output depends on whether a static mathematical interpretation or a dynamic communicative interpretation is given to

the network. The diagram in figure 2 is actually not large enough to demonstrate its matrix nature fully, as this is beyond the scope of the present study. But figure 2 is compatible with both, and the phonotactics is thus phonetically realistic.

## 6. Conclusion

### 6.1 Summary

Figure 2 is a complete and accurate description of the Bulgarian vowel. It has not a single characteristic that parallels a C-phon description. Moreover, it incorporates much more information than a C-phon description of that era would have. It shows the relations between archiphoneme, phoneme, phonemic feature, determined feature, and syllable structure. It would show the relation of the morphophoneme to these concepts, if the data required.[8] It shows that the minimal specification of one (phonemic) feature per phoneme is indeed attainable. It also permits the inclusion of the social dialect data provided by Scatton (1984:72), according to the model in Herrick 1984. The figure 2 description is in every way superior to a C-phon description, to any possible C-phon description,[9] and there is no hope it would be accepted by *Language*.

Thank you for this Forum.

### 6.2 A Final Speculation

At one point in my graduate career I discovered that many of my friends among Syd Lamb's students were, like me, map-freaks. This is not a normal skill or love shared by the general population. At the time someone speculated that a love of maps might be something linguists share. During the past four years I discovered that several close friends who are C-linguists and (otherwise) reasonable individuals were sincerely interested in learning about a stratificational approach to linguistic description. In each case, one-on-one, I picked a descriptive problem that had them stumped. I analyzed the problems, described them, and presented my friends with the answers to their dilemmas. And fell flat on my face, four times running.

The syntactician said, "Yes, well, you may be right. But what I'm really interested in doing is using this problem to rehabilitate this model of GB."

The morphologist said, "But I don't see how this has a parallel in The Theory."

The phonologist said, "You might have some hope of making sense if you didn't insist on using the most ridiculously complex and incomprehensible theory of language."

The dialectologist, who combines interests of the other three, simply sat and looked at me in uncomprehending silence.

Some time later the dialectologist's spouse was driving in unfamiliar backcountry territory while I traced our route on a good map and told him--or her--what was coming up. After we negotiated a particularly tricky multiple switch of roads, which turned out exactly as I had predicted from the map, she--or he--said, "You don't know how good it is to have someone in the front seat who can actually read a map."

Maybe I had it backwards. Maybe only people who can read maps can become competent in a relational network theory of language.[10] Maybe those who cannot read maps have no hope of attaining competence in such a theory. Perhaps C-lin is their only option.

## NOTES

[1] I am once again indebted to fellow map lover and stratificationalist David Lockwood for inspiration, for catching errors in draft, and for reminding me about Herrick 1984. Nothing that follows should be taken as a negative criticism of either him or his 1969 article, which remains an excellent analysis.

[2] The *er goljam* in Bulgarian, phonetically a schwa.

[3] I ignore the unvoiced allophones, which occur in unaccented, open syllables in word-final position.

[4] C-phonologists did indeed speak (and write) in this fashion during the 60's and 70's: I am quoting or paraphrasing here, and none of this represents my own thinking. But all these comments are reasonable if one supposes that C-phon is right and the other (= any other, every other) theory is wrong wherever they disagree. I now return to my own voice.

[5] And Ac (accent), which is not shown in figure 2. Accent is a syllable prosody and is related to a higher phonotactic level than in C-phon.

[6] That is, relations to phonetic ***form***, the original sense of this usage.

[7] They were dealing with binary features. As I deal with singulary features, the minimum should be one.

[8] Morphophonemes include rightward OR nodes like those at A in figure 2, but they also require a special relation to the morphotactics.

[9] To paraphrase C-phon comments from the 60's.

[10] Michael Boutin (UF and SIL) has pointed out that connectionist theories have not had a hearing in *Language*, either.

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# A FORCED-CHOICE WORD-BLENDING TASK FOR TESTING INTRA-SYLLABIC BREAK POINTS IN ENGLISH, KOREAN AND TAIWANESE

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1. INTRODUCTION. Phonological units have long been the topic of linguistic investigations. The largest body of work on phonological units has involved the individual segment; however, of late, there has been a renewed interest in the syllable as a basic linguistic unit, due, in part, to the fact that syllables and intrasyllabic units rather than phonemes are accessible to illiterates, preliterates and those literate in non-alphabetic systems.

Experimental investigations into the structure of the syllable originally begun by Treiman (1983, 1984, 1985) and continued by Dow (1987) and by Dow & Derwing (1989), suggested the onset and rime as primary syllable constituents for English, thus defining the character of the English syllable, in hierarchical terms, as right-branching. Although there has been speculation that the onset/rime division and, hence, the right-branching syllable, could be universal (Fudge 1987), some linguists have found evidence for a left-branching syllable structure in Korean (Youn 1990; Derwing et al. 1992) and Japanese (Kubozono 1989). As part of a larger, cross-linguistic experimental investigation of syllable structure, we set out to strengthen the claim that English speakers prefer a division of the syllable between the onset and rime over a division between the body and the coda (Vennemann 1988) and to test its extension to other languages.

Various experimental techniques have been used to explore the psychological reality of phonological units. The types of experiments which have been used include word-blending (Treiman 1983, 1986) and syllable-inversion games (Treiman & Danis 1988), deletion-recognition (Wiebe & Derwing 1992) and substitution tasks (Dow 1987; Derwing, Dow & Nearey 1988). Using primarily a spoken word-blending game, in which adults were taught to blend two monosyllabic nonsense words (CCVCC structure) into four combinations, including onset-rime (flirz + gruns → fluns) and body-coda (flirz + gruns → flins) blends, Treiman (1986) explored the internal structure of English syllables. Treiman reasoned that if syllables were composed of onset and rime constituents, then games that keep these components together should be more easily learned. Treiman's subjects did, in fact, find it easier to learn the task involving onset-rime blends and made significantly fewer errors on

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[1] The research reported here was supported by research grants from the Social Sciences and Humanities Research Council of Canada (Nos. 410-88-0266 and 410-91-0249), awarded to the second author. The authors also wish to express their thanks to members of the 1992 Linguistics 616 class for collecting the data for the 2-choice word-blending experiment.

the onset-rime blending game than the other games. Thus Treiman provided experimental evidence to support the hypothesis that English speakers consistently preferred to break monosyllabic words between the onset and the rime. Treiman (1988) tested syllables whose onset and peak (i.e., body) were linked together by distributional constraints. In a blending task, subjects kept the body intact only 10% of the time, preferring to segment the input words at the onset-rime boundaries and to blend the onset of one word with the rime of the second. Again the evidence indicates that, whereas the body is unlikely to form a unit in English, speakers prefer to break syllables at the onset-rime boundary and keep the rime intact.

One problem with Treiman's approach, however, was that it required the laborious elicitation of production responses from large numbers of individual subjects, discouraging the extension of this line of research to other languages. A variation of Treiman's word-blending task was an attractive possibility, since that task had already been successfully employed in English to yield consistently clear results. We hoped to develop a variant that would clarify the primary break point in diverse languages, while avoiding the inefficiencies in time and effort that were involved in eliciting individual responses in a production task. In the hope of finding a more efficient experimental procedure to achieve this same end, a forced-choice variant of the word-blending task was devised so that data could be collected simultaneously from large groups.

2. FORCED-CHOICE WORD BLENDING TASKS. Two versions of a forced-choice word-blending task were developed and validated for English. The application of these tasks were extended to other languages two of which, Taiwanese and Korean, will be reported here.

2.1. FOUR-CHOICE VERSION.

2.1.1. ENGLISH FOUR-CHOICE VERSION. In the first version of this new task, 168 undergraduate students at the University of Alberta, all of whom were native speakers of English, were tested. Subjects were read a pair of words and were asked to circle their single choice of four possible blends, which were written on their answer sheets in standard orthography. Whereas the four choices were presented in both written and oral form, the input word pairs were only presented orally. A series of monosyllabic real words served as input. Given as output were four possible blends, two based on the primary onset/rime break point (OnRi blends) and two based on the body/coda break point (BoCo blends). Examples from the four-choice blending task are given below. (The two OnRi blends are underlined for ease of identification here but were, of course, not specially marked on the test itself.).

| | | | | | |
|---|---|---|---|---|---|
| 1. bug + cat | → | a) bat | b) kug | c) but | d) kag |
| 2. pound + joist | → | a) joind | b) poust | c) jound | d) poist |
| 3. goose + shade | → | a) gade | b) gude | c) shoose | d) shase |
| 4. deed + soap | → | a) deep | b) dope | c) seed | d) soad |

On the basis of 12 such word-blends, subjects showed a significant preference for the OnRi blends (underlined above) over the BoCo blends (not underlined), confirming Treiman's results and supporting a right-branching syllable structure for English.

2.1.2. KOREAN FOUR-CHOICE VERSION. The four-choice version of this task was also presented to 82 undergraduate students at the Sogang University in Seoul. A set of 48 items was constructed containing test items such as: KANG + SEM → a) KAM b) SENG c) KEM d) SANG (once again, the OnRi blends are underlined here). For each orally presented input pair, the Korean subjects were asked to circle their preferred choice on their answer sheets, which contained four randomly ordered alternative blends written in standard Korean orthography. Subjects chose BoCo blends significantly more often than BoCo ($t(12)=5.578$, $p< .0001$). This result supports the idea that Korean, unlike English, has a left-branching syllable structure, where the peak adheres more closely to the onset and with the primary break point between the peak and the coda.

2.1.3. DISCUSSION OF FOUR-CHOICE WORD-BLENDING TASKS. While this type of experiment permitted the rapid collection of a large body of data from a relatively short test, it suffers from some potentially problematic control defects. First, forcing subjects to choose from four blends places a high burden on short-term memory. This potential short-term memory effect was minimized by presenting the choices simultaneously in written and oral form and by randomly varying the position of the blend-types from item to item as shown in the English examples above. Second, a factor of blending order is introduced. Since the input pair was only presented in one order, some left-to-right order preference might result in the selection of a blend of the first part of the first input word and the second part of the second input word (On1Ri2 and Bo1Co2)[2] over the reverse blends (On2Ri1 and Bo2Co1). In actual fact both our English and Korean subjects did prefer On1Ri2 blends over On2Ri1 blends, but the reverse was true for BoCo blends, where the preference was for Bo2Co1 over Bo1Co2 blends. So although the problem of order effects is partially alleviated by changing the order of output choices, other factors may be involved, such as frequency bias for or against real word blends or orthographic interference (see Derwing & Dow 1987). Third, since two blends are presented for each type (On1Ri2; On2Ri1 and Bo1Co2; Bo2Co1), subjects may be distracted by such arbitrary choices from the real issue at hand.

2.2. TWO-CHOICE WORD-BLENDING TASK. In order to test for syllable boundaries independently of orthography while better controlling for ancillary order effects, a second fully oral study was conducted which reduced all choices to two. While the two-choice version requires more items to cover the same ground, it lessened the memory burden and allowed for better overall control.

2.2.1. ENGLISH TWO-CHOICE VERSION. After a short training period, 102 native speakers of English enrolled in introductory linguistics courses at the University of Alberta were orally presented with pairs of words (e.g., SIEVE - FUZZ) and were asked to choose between two possible blends (such as SUZZ or SIZZ), also presented orally. One group (group 1) was supplied with glosses for the possible blend (in this case "fuzz on a sieve") to make the task seem more natural. To control for any possible semantic interference introduced by the addition of glosses, a second group (group 2) was tested using the same stimulus items without the glosses. (For a complete list of stimulus items, see the appendix.) A template of blend choices is given below:

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[2] In the notation of the type On1Ri2, the numeral 1 refers to the first word of the input pair and the numeral 2 refers to the second word.

1. a) On1Ri2 b) Bo1Co2
2. a) Bo1Co2 b) On1Ri2
3. a) On1Ri2 b) On2Ri1
4. a) Bo1Co2 b) Bo2Co1

Structural type was controlled by asking subjects to choose between blends where the major break-point was the same (i.e., between two OnRi or two BoCo blends), where the choice involved a blend consisting of the first part of the first word and the second part of the second word, or the reverse (item types 3 and 4 above). The choice between OnRi and BoCo (types 1 and 2 above) controlled for blending order effects.

For both groups there was a significant preference for OnRi blends (SIEVE + FUZZ→ SUZZ or FIV: group 1, 65% overall; group 2: 75%) over BoCo blends (SIZZ or FUV: 35%, 25%) (for both groups p<.0001). These results indicate that English vowel nuclei are linked with a following coda to form a rime-like unit, rather than joined with a preceding onset to form a body.

The breakdown of results of all four blend-types for both groups is given in Table 1 below.

Table 1. English Two-Choice Word-Blends: Comparison of All Types.

| Blend- | Group 1 (with Glosses) | | | Group 2 (without Glosses) | | |
|---|---|---|---|---|---|---|
| Type | Mean | StDev. | Sig. | Mean | StDev. | Sig. |
| On1Ri2<br>Bo1Co2 | .65<br>.35 | .17 | .0001 | .81<br>.19 | .16 | .0001 |
| Bo1Co2<br>On1Ri2 | .36<br>.64 | .19 | .0001 | .31<br>.69 | .12 | .001 |
| On1Ri2<br>On2Ri1 | .53<br>.47 | .17 | ns | .76<br>.24 | .09 | .0001 |
| Bo1Co2<br>Bo2Co1 | .54<br>.46 | .16 | .05 | .69<br>.31 | .15 | .0001 |

In both groups, subjects significantly preferred an OnRi blend over a BoCo blend, regardless of blending order. Further, when confronted with blends of the same type, subjects preferred a blend which combined the first part of the first word with the second part of the second word (i.e., On1Ri2 and Bo1Co2 blends) over the reverse (On2Ri1 and Bo2Co1). This trend was more marked in group 2, where subjects were not supplied with glosses, suggesting that there was less guesswork involved when the subject's attention was not drawn to word meaning, thus allowing the subject to focus more on phonological aspects of the word-blend.

The data were further analyzed to see if the choice of blend was affected by whether it was a real or a nonsense word. There were 22 items of the 48 that had nonsense blends for both choices. The results of the analysis for these items are shown in Table 2 below.

Table 2. English Two-Choice Word-Blends: Comparison of Nonsense Blends Only.

| Blend-Type | Group 1 (with Glosses) | | | Group 2 (without Glosses) | | |
|---|---|---|---|---|---|---|
| | Mean | StDev. | Sig. | Mean | StDev. | Sig. |
| On1Ri2 | .68 | .22 | .0001 | .78 | .20 | .01 |
| Bo1Co2 | .32 | | | .22 | | |
| Bo1Co2 | .29 | .21 | .0001 | .24 | .04 | .01 |
| On1Ri2 | .71 | | | .76 | | |
| On1Ri2 | .57 | .21 | ns | .77 | .10 | .01 |
| On2Ri1 | .43 | | | .23 | | |
| Bo1Co2 | .54 | .24 | ns | .73 | .17 | .01 |
| Bo2Co1 | .46 | | | .26 | | |

Restricting the analysis to just nonce-nonce choices, we obtained similar results to those including both real and nonsense blends for both groups 1 and 2 when the choice was between OnRi and BoCo blends (cf. Tables 1 and 2 above). However, when the choice was between similar types (On1Ri2 or On2Ri1 and Bo1Co2 or Bo2Co1), we see an order effect emerging for group 2, where no glosses were supplied, and a possible semantic effect for the group receiving definitions for their blends (group 1).

A subsidiary experiment was conducted to further explore possible semantic confounds in word-blending experiments. All 96 blend choices with their corresponding inputs were presented orally to 23 English-speaking undergraduate students after a short training period. They were asked to judge whether they liked a blend like SUZZ, when given an input pair like SIEVE - FUZZ. They were cautioned not to let the fact that a word was a real or a nonsense word influence their judgements, but to base their choice solely on the way the blends sounded. Subjects gave significantly more positive responses to real blends than to nonsense blends, and they also preferred OnRi blends to BoCo blends. They also showed a numerical preference for blends which combined the first part of the first word with the second part of the second word (On1Ri2 and Bo1Co2) over the reverse (On2Ri1 and Bo2Co1), but this preference was not significant.

It appears then that there are potential semantic confounds in the forced-choice word-blending experiments, which need to be recognized and minimized in any subsequent experiments. These confounds do not, however, appear to invalidate the results of the current experiment, as the results presented in Table 2 for group 2 (the nonsense words only for the group that received no definition or gloss) corroborate the overall results of both experiments. See Table 3 for a comparison of results of both versions of the experiment for English.

Table 3. OnRi vs BoCo Blends for Nonsense Blends Only.

| Version | OnRi | BoCo | p |
|---|---|---|---|
| 4-choice | .59 | .41 | ns |
| 2-choice (group1) | .69 | .31 | .01 |
| 2-choice (group2) | .78 | .22 | .01 |

2.2.2. KOREAN TWO-CHOICE VERSION. A two-choice word-blending task was conducted in Korean using test items of the following types.

1a. KANG + SEM → KEM
1b. KANG + SEM → KAM
2a. SEM + KANG → SENG
2b. SEM + KANG → SANG

The subjects were 80 undergraduate students at Sogang University in Seoul, different from those used in the four-choice version. The subjects consistently preferred BoCo blends over OnRi blends, as shown in Table 4 below.

Table 4. Korean Two-Choice Word-Blends: Comparison of All Types.

| Items | Type | Mean | t-value | df | Sig. |
|---|---|---|---|---|---|
| All | OnRi | .43 | 3.35 | 79 | .01 |
|  | BoCo | .57 |  |  |  |
| Nonsense | OnRi | .44 | 2.85 | 79 | .01 |
| Nonsense | BoCo | .56 |  |  |  |
| Real | OnRi | .43 | 3.05 | 79 | .01 |
| Real | BoCo | .56 |  |  |  |

Further, subjects significantly preferred blends which combined the first part of the first word with the second part of the second word (Bo1Co2 and On1Ri2) over the reverse (Bo2Co1 and On2Ri1). These are similar to order effects noted in the English two-choice blends.

The results of the two-choice and four-choice word-blending experiments in Korean indicate that Korean vowels are more closely linked to preceding consonants than to following ones, a result that is consistent with a left-branching model of the syllable, and challenging the notion of a universal right-branching approach to syllable structure.

2.2.3. TAIWANESE TWO-CHOICE VERSION. Two experiments were conducted using native Taiwanese speakers. Both involved the two-choice version of the word-blending task, but in two sub-versions. In the first experiment, blends were provided of both the On1Ri2 and On2Ri1 types, as well as Bo1Co2 and Bo2Co1, but in the second experiment all blends were consistently constructed in a left-to-right direction (i.e., only On1Ri2 and Bo1Co2 blends were included). To help compensate for the added difficulty of the right-to-left blends, the blend choices in the first experiment were presented to the subjects in written form, but the second experiment was conducted entirely with oral stimuli.

Subjects in the first experiment were 95 undergraduate students at Tsing Hua University in Taiwan. As shown in Derwing et al. (1992), the results of the first experiment were inconclusive, as there were no significant differences between OnRi and BoCo choices. The argument was presented in Wang & Derwing (1993), however, that the reason for this result may not have been a lack of branching-direction preference, but rather a large guessing factor, which could have resulted from the difficulty of having to deal with both left-to-right and right-to-left blends. (Recall that both Bo2Co1 and On2Ri1 blends proved to be generally less acceptable to both English and Korean subjects than Bo1Co2 and On1Ri2 blends, i.e., blends that correspond to the natural left-to-right presentation order of the subcomponents in the two input syllables.) The second experiment was constructed with this potential problem in mind.

Subjects in the second Taiwanese experiment were 101 undergraduate students at Tsing Hua University in Taiwan, none of whom had participated in the first experiment; they were presented with 42 test items. (For a more detailed discussion of this experiment, see Wang & Derwing 1993). This time the results showed a significant preference for OnRi choices over BoCo choices ($t=4.22$, $p<.001$). The Taiwanese subjects; performance on the second two-choice word-blending experiment thus suggests that in Taiwanese the primary break is between onset and the rime and that syllable structure is right-branching, just as in English.

3. SUMMARY AND CONCLUSIONS. In our attempts to expand the experimental exploration of syllable structure, various experimental techniques have been used. The word-blending games used by Treiman and others appeared to effectively measure syllable structure in English, specifically demonstrating that English speakers consistently prefer to break monosyllabic words between the onset and rime. However, the tedious testing of individual subjects in Treiman's production tasks discouraged the extension of this line of research to other languages, due to the cost in time and effort to both subjects and experimenters. In order to validate that the primary break-point in English syllables is between initial consonants and the vowel, and restricting the main question of interest to the primary bonding between vowel and adjacent consonant in other languages, a forced-choice variant of Treiman's word-blending task was devised which could be group-administered. Two versions of this task were developed, validated for English and then extended to Korean and Taiwanese.

In all cases, a series of monosyllabic real words were presented as input and four possible first-order blends based on the primary break-points before and after the vowel were offered for selection as output. In the first version of this task, the four-choice word-blending task, subjects were presented with all four choices at once, in both written and oral form, and were forced to choose among them. This task proved to be effective in the rapid collection of a large body of data from a relatively short test and had the advantage that all four blend possibilities could be handled at once. This approach might be advantageous in the initial pilot stage in some new language, in order to determine whether new populations (such as non- or semi-literate sub-groups) could understand or perform the task at all. Although it served to confirm previous results obtained in both English and Korean, the results were less robust than when the two-choice version was used. Possible reasons for this include the fact that the four-choice version places a heavier burden on short-term memory and that it includes distracting arbitrary choices between blends of the same type, as well as introducing an orthographic factor in the attempt to alleviate the short-term memory problems.

In order to circumvent the problems that seemed to be inherent in the four-choice version, therefore, a better controlled two-choice version of the forced-choice word-blending task was also devised. The two-choice version controls for left-to-right ordering preference by reversing the order of input items, reduces the memory load by offering only two choices and limits orthographic interference by a purely oral presentation. One drawback of the two-choice version, however, is the fact that in order to test all possible combinations tested in the four-choice counterpart, the task becomes longer and more repetitious. In an attempt to make this repetitive task more natural and interesting, definitions or glosses were provided for the blend choices, and to control for potential semantic confounds, an alternative two-choice task without glosses was also developed. Encouragingly, similar results were obtained for both the form with and the form without glosses. It became apparent, nevertheless, that the no-gloss form produced a wider range of significant effects than the glossed form did. With this in mind, subsequent tests in Korean and Taiwanese were administered using the two-choice version without glosses. A subsidiary experiment indicated that subjects preferred real-word blends and blends that corresponded to the natural, left-to-right presentation order of the subcomponents in the two input syllables. Any future research ought to keep these factors in mind.

For testing in diverse languages, the group-administered two-choice word-blending experiment (without glosses) proved to be the superior testing method. It has confirmed previous results which suggested a right-branching syllable structure for English, it has confirmed native speaker intuitions that the Korean syllable has a left-branching structure, and it has indicated that Taiwanese, like English, has syllables that break down most naturally into onset plus rime components.

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## APPENDIX

### English Stimuli and Glosses

| | Input Pairs | Glosses | Blends<br>O1R2 | O2R1 | B1C2 | B2C1 |
|---|---|---|---|---|---|---|
| 1. | /bʌg – kæt/ | (a) "A cat that looks like a bug" | /bæt | *kʌg | bʌt | *kæg/ |
| | /kæt – bʌg / | (b) "A bug that chases mice" | | | | |
| 2. | /bɛd – pɔt/ | (a) "A pot to sleep in" | /bɔt | pɛd | bɛt | pɔd/ |
| | /pɔt – bɛd/ | (b) "A bed to cook in" | | | | |
| 3. | /sɪv – fʌz/ | (a) "Fuzz on a sieve" | /*sʌz | *fɪv | *sɪz | *fʌv/ |
| | /fʌz – sɪv/ | (b) "A sieve for fuzz" | | | | |
| 4. | /did – sop/ | (a) "Soap with a deed" | /dop | sid | dip | sod/ |
| | /sop – did/ | (b) "A deed for soap" | | | | |
| 5. | /but – kov/ | (a) "A cove in a boot" | /*bov | kut | *buv | kot/ |
| | /kov – but/ | (b) "A boot like a cove" | | | | |
| 6. | /gus – šed/ | (a) "Shade for a goose" | /*ged | *šus | *gud | *šes/ |
| | /šed – gus/ | (b) "A goose that provides shade" | | | | |
| 7. | /šrɪmp – twɛlv/ | (a) "Twelve that are small" | /*šrɛlv | *twɪmp | *šrɪlv | *twɛmp/ |
| | /twɛlv – šrɪmp/ | (b) "Shrimp for twelve" | | | | |
| 8. | /kwɔrt – smɛlt/ | (a) "Smelt in a quart" | /*kwɛlt | *smɔrt | *kwɔlt | *smɛrt/ |
| | /smɛlt – kwɔrt/ | (b) "A quart of smelt" | | | | |
| 9. | /frʌnt – blæŋk/ | (a) "A blank with a front" | /fræŋk | blʌnt | fʌŋk | *blænt/ |
| | /blæŋk – frʌnt/ | (b) "A front that's blank" | | | | |
| 10. | /fent – baynd/ | (a) "Bound so tight you faint" | /faynd | *bent | fend | *baynt/ |
| | /baynd – fent/ | (b) "You faint due to binding" | | | | |
| 11. | /tent – pawnd/ | (a) "A pound that is tainted" | /*tawnd | pent | *tend | *pawnt/ |
| | /pawnd – tent/ | (b) "Something tainted that weighs a pound" | | | | |
| 12. | /faynd – ǰoynt/ | (a) "A joint that you find" | /*foynt | *ǰaynd | *faynt | ǰoynd/ |
| | /ǰoynt – faynd/ | (b) "To find a joint" | | | | |

Note: * denotes nonsense blends

# IV

# MORPHOLOGY AND SYNTAX

# NEOLOGISMS IN ACADIAN-FRENCH FISHING TERMINOLOGY AN ANALOGICAL SYNTAX ANALYSIS

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## Introduction

The focus of this paper is the formation of simple and complex lexemes found in the maritime vocabulary of Acadian-French fishermen living in communities throughout the Canadian maritime provinces of New Brunswick, Nova Scotia and Prince Edward Island. Lexemes used in the word formations constitute a heritage of maritime vocabulary which can be traced to 17th-century colonial Acadia, today's province of Nova Scotia.

During the 17th and 18th centuries, Acadian fishermen acquired a knowledge of French and English cod-fishing terms by contact with French, Québécois and colonial American commercial cod fishermen. By the 19th century Acadian settlements had extended into today's northeast New Brunswick, where Americans fished for mackerel in the Gulf of Saint Lawrence. Contact with the Americans resulted in the borrowing of English mackerel-fishing terms by Acadian fishermen. A great innovation occurred in the Canadian fishing industry toward the end of the 19th century, when British, Canadian and American investors established lobster fisheries throughout the maritime provinces.

Acadian fishermen who went into lobster fishing were faced with new fishing gear and new English terminology. They adapted linguistically to this situation by borrowing some of the new English terms such as "palings", the 5 boards which form the base of a lobster pot, and by using French and English terms such as snood and hallope, which had been associated with cod-fishing terminology since colonial times. At the beginning of the 20th century, trawl fishing was introduced into cod fishing and trawling replaced traditional handline fishing. The similarities between cod trawl-fishing gear and lobster-fishing gear led to an analogical transposition of the term trawl into lobster fishing.

Traditional historical linguistics holds that nomination, the assignment of new names to either old or new things, takes place through borrowing and analogy. Nomination is analyzed as onomasiological (form) and semasiological (referent) change (Antilla 1989:139). Sydney Lamb (1991:183-85) proposes a synchronic model for the cognitive construction of new lexemes. The model is analogical syntax. It operates on the principle of stored exemplars of lexeme complexes. The exemplars are related to a lexeme chain. In Babitch (1993), I showed that analogy was as much a factor in the formation of new words by

Acadian fishermen throughout the 19th and 20th centuries as it is in the word formations described in Lamb (Lamb:184).

### Purpose

The purpose of this paper is an analysis of the word formations found in the Acadian fishing-gear terminology according to a model of analogical syntax.

### Data Base

The data in this study are from two surveys. The first, conducted in 1981-82, was limited to the lobster-fishing terminology of Acadian-French fishermen living on Miscou and Lamèque Islands in northeast New Brunswick. The second, conducted in 1988-89, included 18 localities throughout the provinces of New Brunswick, Nova Scotia and Prince Edward Island. The questionnaire used in this survey was much more extensive than the one used on Lamèque and Miscou Islands. The subjects were asked to answer 455 questions covering ten different themes or lexical subsets. Each theme treats a separate aspect of maritime life, e.g. boats, clothing, fish, fishing gear and weather. The entire questionnaire elicited a lexicon of 2,206 variants. This survey was for a geolinguistic project entitled "Atlas linguistique des côtes francophones de l'Atlantique". Research for the project was funded by the Social Sciences and Humanities Research Council of Canada from 1989 to 1992. Members of the team currently working on the project are Patrice Brasseur of the French National Research Council, Louise Péronnet of Moncton University, Wladyslaw Cichocki of the University of New Brunswick and myself.

### Method

This paper concentrates on the naming of fish and fishing gear. The names of fish show very clearly that analogy functions in the naming of fish. Chien de mer and loup de mer are complex lexeme formations. The first was coined as a substitute for the standard French word *requin* "shark" and the second as a substitute for *phoque* "seal". The root or head noun of these complex lexemes represents a substitution of common use vocabulary within the French grammatical noun + preposition + noun phrase structure. The qualifier *de mer* has been generalized as an exemplar across individuals in the speech community, permitting the coining of complex lexemes to name different kinds of fish: *chat de mer*, *poule de mer* and *soleil de mer*.

Analysis of fishing-gear nomination differs from the fish nomination in that the new formations are part of a specialized vocabulary. The lexical variants are French, English and hybrids, that is a mixture of French and English terms. In this case the study of word formations requires a phonological and a grammatical analysis of the data and the interconnections of each to the conceptual level.

The following analogical syntax analysis does not include phonology. It combines an adaptation of David Lockwood's morphotactic realizational approach (Lockwood 1993:134) and William Sullivan's relational network with tactic generalization. The set of lexical fishing-gear formations analyzed are grouped according to class membership and are described as construction and class-membership formulas with analogical substitutions.

## Analysis

The fishing-gear formations are classified into complex and simple lexemes. The formation of the simple lexemes are grouped into 2 classes and the complex lexemes into 4.

## Complex Lexemes

**CLASS I** English and French lexemes appear within the French noun + preposition + noun phrase structure. This class can in turn be divided into 6 subclasses in which

EN = English noun

FN = French noun

P = preposition

## SUBCLASSES

| | |
|---|---|
| 1) EN + à(P) + FN | crate à homards |
| 2) FN + à(P) + FN | boîte à homards |
| 3) EN + à(P) + EN | tub à trawl |
| 4) EN + de(P) + FN | gear de trappes |
| 5) FN + de(P) + FN | amarre de bouée |
| 6) EN + de(P) + EN | rack de trawl |

**CLASS II**: Hybrid lexemes appear in an English noun + noun word structure. This class is divided into 2 subclasses.

**SUBCLASSES**

| | |
|---|---|
| 1) FN + EN | bourne line |
| 2) EN + FN | stand bouée |

**CLASS III**: Hybrid lexemes appear in an adjective + noun structure

| | |
|---|---|
| 1) F(adj.) + EN | petit swell |

**CLASS IV**: Hybrid lexemes appear in a noun + adjective structure in which an English Verb is treated as a French past passive participle (with appropriate ending + agreement) and functions as a French adjective

| | |
|---|---|
| (FN + EV(FPP) | noeud splicé |

### Simple Lexemes

The formation of simple lexemes is grouped into 2 classes.

**CLASS 1**: The addition of French suffixes to an English noun is divided into 2 subclasses.

**SUBCLASSES**

| | |
|---|---|
| 1) EN + FS(age) | ropage |
| 2) EN + FS(eux) | smuggleux |

**CLASS II**: A French infinitive suffix is added to an English verb.

| | |
|---|---|
| 1) EV + FS(inf.) | mender |

It is clear from simple observation that the sample data can be described formally according to an analogical syntax model. An example of such a formalized description will include data from the subclass preposition à phrase structure of the Class I complex lexemes. The preliminary data for this analysis uses an adaptation of David Lockwood's morphotactic formula description (Lockwood 1993:93-100, 118-138).

**Word Structure Formula**

En = English noun

Fn = French noun

P = Preposition à

**Construction Formula**

$Nn_1$ = En P Fn

**Class Membership Formula**

| | |
|---|---|
| En | crate |
| P | à |
| Fn | homards |

Semantically different analogical substitution for "crate à homards", tank à homards

**Construction Formula**

$Nn_2$ = Fn P Fn

**Class Membership Formula**

| | |
|---|---|
| Fn | boîte |
| P | à |

Fn ↄ {homards}

**Semantically different** analogical substitution for the lexeme "boîte à homards", cage à homards.

**Semantically related** analogical substitutions for the complex lexeme "cage à homards" attrape à homards, casier à homards, trappe à homards, bourne à homards.

The graphic representations of the data selected from the subclass preposition à phrase structure Class 1 complex lexemes, reflect William Sullivan's view of analogical syntax. Figures 1, 2, and 3 represent successive stages in the development in 3 people, each of whom understands all the terms. Figure 1 is a realizational analysis of complex lexemes.

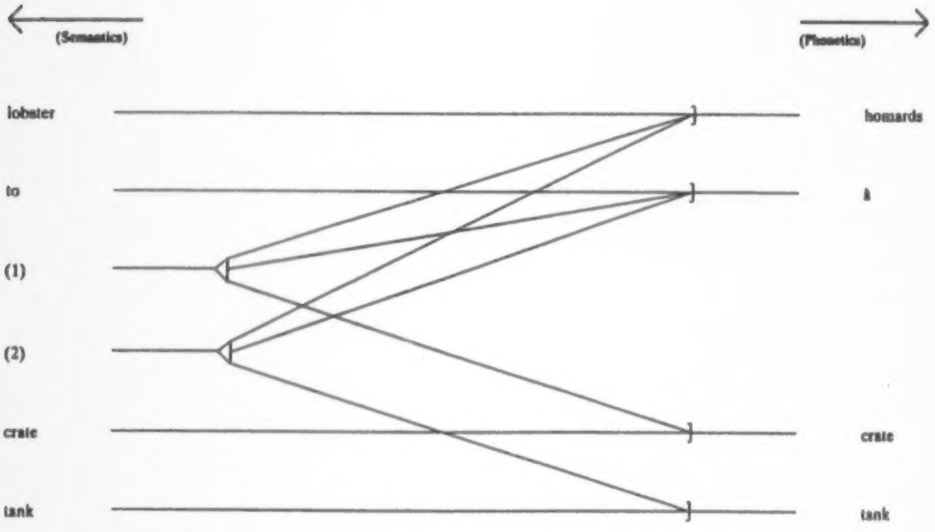

FIGURE 1: *Realizational Analysis with no generalization*
(1 and 2 are just complex lexemes )

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Figure 2 adds a partial generalization to the realizational analysis.

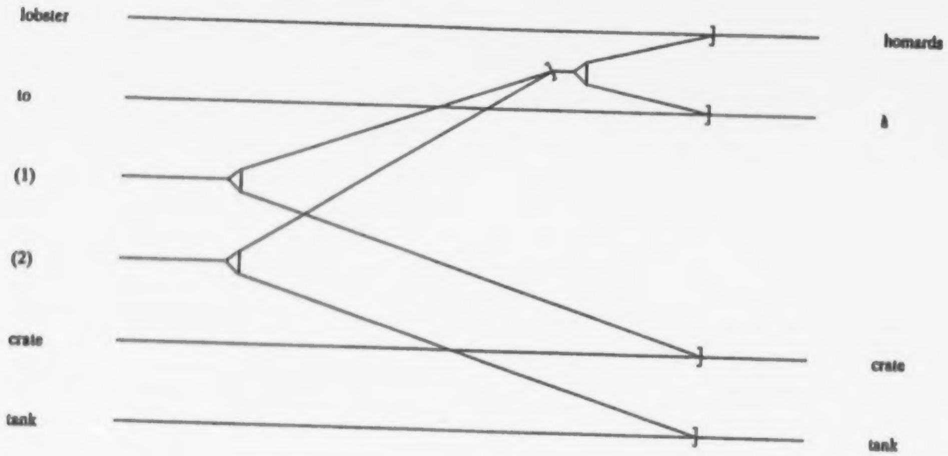
lobster
to
(1)
(2)
crate
tank
homards
à
crate
tank

**FIGURE 2:** *Realizational Analysis with partial generalization*
(1 and 2 are now exemplars )

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Figure 3 is realizational analysis with tactic generalization

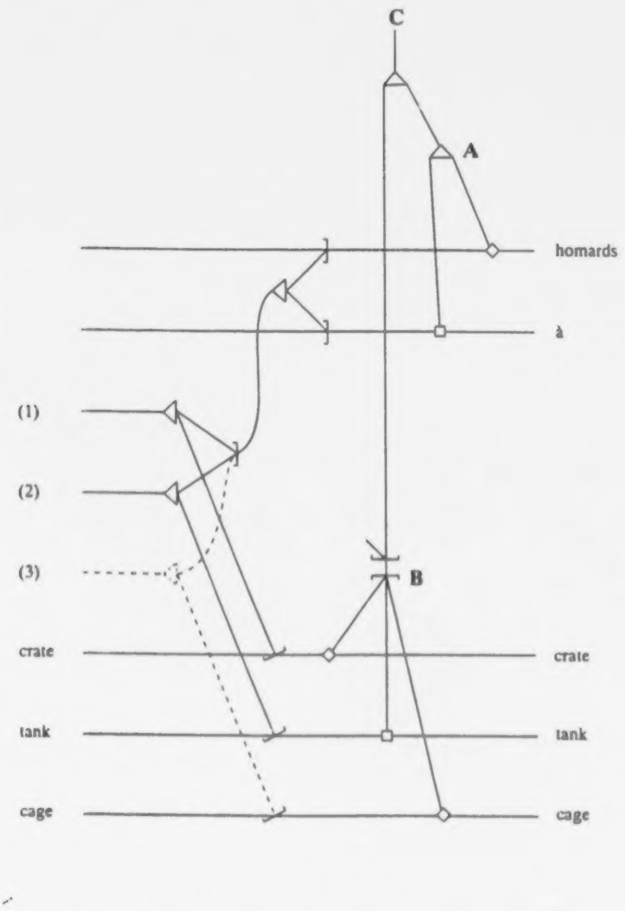
C
A
homards
à
(1)
(2)
(3)
B
crate
crate
tank
tank
cage
cage

FIGURE 3: *Realizational Analysis with tactic generalization*

All compound ordering is supplied by **A**. Productivity comes by adding lines at **B** and more lines to the left as with (3). Full tactic generalization spreads upward from **C**. In Halliday's terms **C** would be Nominal Group related to Noun Phrase followed by Qualifier.

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## Discussion

A morphotactic description of the formation of complex lexemes is a distributional, not a semantically-based analysis. To corroborate this fact, the sample data analyzed show that the head nouns which all have a common qualifier need not be semantically related. William Sullivan's relational network representation of the data shows clearly how a tactic pattern is generalized to produce semantically non-related complex lexemes. Figure 3 shows full tactic generalization. According to Sullivan, analogy is a first step in generalization. The syntactic exemplar is an ordered AND. Analogy is this AND with substitution. In the present study, analogy is a generalization of the AND with an OR node on one of the plural side relations.

## Conclusion

The Acadian fishermen have constructed complex lexemes by analogy based on stored exemplars. These word formations can be formally analyzed within a model of analogical syntax. William Sullivan's relational network representation of the data shows how the fishermen could generalize stored fishing-gear information. The analysis in this study digresses from Lamb's current hypothesis of analogical syntax in that it takes into consideration tactic constructions in the formation of complex lexemes. According to Lamb, new complex lexemes are formed not as instantiations of tactic constructions, but by analogy with previously existing lexemes (Lamb 1991:181). Results of further research are therefore needed to determine whether tactic constructions enter into an analogical syntax analysis of nomination. It is likely that the process will differ in degree and in detail from person to person. Still, it is possible that creativity of this sort involves both examplars and tactic patterns of greater or lesser extent.

I wish to thank William Sullivan for taking the time to read and comment on this paper and also for supplying the relational network graphs. All errors are my own.

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# PSEUDO-CLEFTS IN SPANISH

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## 1. Introduction:

The aim of this paper is to examine regular pseudo-cleft sentences in Spanish, a construction which constitutes a problematic area of contemporary research in grammar. In the literature, studies of this type of construction are predominantly oriented towards the English language, whereas little attention has been drawn to Spanish pseudo-clefts which display a number of idiosyncratic characteristics. The examples shown in (1-4) below illustrate the form of pseudo-clefts in Spanish, organized according to the function realized by the focus:[1]

(1) Subject:

a. [+ HUMAN] Ø [La que/quien está cantando] es María.
'The person who is singing is Maria'

b. [- HUMAN] Ø [Lo que está encima de la mesa] es el gato.
'What is on the table is the cat'

(2) Direct object:

a. [+ HUMAN] Ø [A la que/a quien vi ayer] fue a Gloria.
'Who I saw yesterday was Gloria'

b. [- HUMAN] Ø [Lo que visitó] fue el museo.
'What he visited was the museum'

(3) Indirect object:

a. [+ HUMAN] Ø [A la que/a quien (le) escribí] fue a Marta.
'Who I wrote to was Marta'

b. [- HUMAN] Ø [A lo que le falta una pata] es a la mesa.
'What is missing a leg is the table'

(4) Complement of a preposition:

a. [+ HUMAN] Ø [De la que/de quien me acuerdo mucho] es de Lidia.
'The person I think about a lot is Lidia'

---

[1] These examples are a free adaptation of those found in Campos (1993).

b. [+ HUMAN] Ø [Con el que/con quien salgo mucho] es con Marcos.
'The person with whom I go out a lot is Marcos'

c. [-HUMAN] Ø [Por donde paso siempre] es por el estadio.
'The place I always pass by is the stadium'

d. [- HUMAN] Ø [De lo que habló] fue de la película.
'What he talked about was the movie'

In the present paper, we will first provide some empirical evidence in support of the claim that *Wh*-movement is involved in the derivation of this type of construction. Secondly, we will analyze the structure of pseudo-clefts and the nature of the copula in an effort to demonstrate that these constructions display a connectedness between elements of the relative clause and the focus. Finally, we will account for this connectedness in syntactic terms.

## 2. Wh-movement:

In the following discussion, we will show that the *wh*-phrase cannot originate in its surface position within CP, but rather it must originate inside IP. Thus, the proposed S-structure for a sentence such as (2a) would be represented as follows:

(5) $[_{CP} [_{IP} [_{DP} [_{NP}$ Ø $[_{CP}$ a quien$_i$ pro vi $t_i$ ayer]]] fue $[_{DP}$ a Gloria]]]

Different tests can be applied to this construction to provide some empirical evidence in support of this claim[2]. Since the *wh*-phrase within the relative clause is assumed to move in the syntax, we expect it to meet all the constraints that apply to movement. As we show below, this expectation is borne out.

Consider first the contrast between extraction from a sentential complement of a noun and extraction from a relative clause, as shown in (6) and (7), respectively:

(6) a. Oímos la noticia de que a quien viste fue a Gloria.
'We heard the news that who you saw was Gloria'

b. A quien$_i$ oímos $[_{DP}$ $t_i$ la $[_{NP}$ noticia de $[_{CP}$ $t_i$ que $[_{IP}$ $[_{VP}$ $t_i$ $[_{VP}$ viste $t_i$... fue a Gloria.

---

[2] Binding facts such as the ones illustrated in sentences (i) and (ii) do not constitute a conclusive test to demonstrate that movement is involved in pseudo-cleft constructions:

(i) ...$[_{CP}$ Quien$_i$ $[_{IP}$ $t_i$ está peinándose (a sí mismo)$_i$]] es Pedro...

(ii) ...*$[_{CP}$ Quien$_i$ $[_{IP}$ $t_i$ está cantando con él$_i$]] es Jorge...

The contrast in grammaticality between these two sentences can be explained even if no movement is involved. In that case, it would be the *wh*-element *quien*, instead of its trace, that would bind the anaphor in (i) and the pronominal in (ii) within their governing category, the IP.

To whom we heard [$_{DP}$ $t_i$ the news (of) [$_{CP}$ $t_i$ that [$_{IP}$ you [$_{VP}$
$t_i$[$_{VP}$ saw $t_i$ ... was (to) Gloria

(7) a. Conozco a un chico que visitó el Museo del Holocausto.
'I know a guy who visited the Holocaust Museum'

b. *Lo Op$_i$ que conozco [$_{DP}$ $t_i$ a un [$_{NP}$ chico$_j$ [$_{CP}$ WH$_j$ que [$_{IP}$ $t_j$
[$_{VP}$ $t_i$ [$_{VP}$ visitó $t_i$ ... fue el Museo del Holocausto.
What I know [$_{DP}$ $t_i$ a [$_{NP}$ guy$_j$ [$_{CP}$ WH$_j$ that [$_{IP}$ $t_j$ [$_{VP}$ $t_i$ [$_{VP}$
visited $t_i$ ... was the Holocaust Museum

Following the *Barriers* (Chomsky 1986) account of movement, we will assume that the *wh*-element moves through VP-adjunction before proceeding to COMP, so as not to violate Subjacency. We will also assume that the *wh*-phrase moves from [Spec, CP] to [Spec, DP]. In (6) this movement crosses two maximal projections, CP and NP. However, CP is L-marked by *noticia*, and is therefore not a barrier, and the traces in [Spec, DP] and [Spec, CP] are one-adjacent (NP cannot be L-marked by the verb *oímos*; since it is blocked by DP; however, the crossing of only one barrier does not cause a Subjacency violation). Thus, there is no violation of Subjacency in the derivation shown in (6), since only one bounding node (CP or DP) has been crossed at a time. In (7), on the other hand, movement of the pseudo-cleft sentence operator, Op, from inside the VP to [Spec, CP] is not possible since the relative operator, WH, occupies [Spec, CP]. Movement of the Op would cross two barriers, namely, CP and NP which are not L-marked.

Further evidence in support of the movement analysis of pseudo-clefts is provided by the extraction out of a sentential complement when [Spec, DP] is occupied by a universal quantifier:

(8) a. Oímos todas las noticias de que a quien viste fue a Gloria.
'We heard all the news that who you saw was Gloria'

b. *A quien$_i$ oímos [$_{DP}$ todas las [$_{NP}$ noticias de [$_{CP}$ $t_i$ que [$_{IP}$
[$_{VP}$ $t_i$ [$_{VP}$ viste $t_i$ ... fue a María.
To whom we heard [$_{DP}$ all the [$_{NP}$ news (of) [$_{CP}$ $t_i$ that [$_{IP}$
you [$_{VP}$ $t_i$ [$_{VP}$ saw $t_i$ ... was (to) Maria

In (8b) movement from the embedded CP to the main clause crosses two barriers : the NP containing *noticias* which cannot be L-marked by the verb *oímos* because of the blocking effect of the quantifier (a maximal category); and the DP, which becomes a barrier by inheritance. In terms of bounding nodes, both a CP and a DP are crossed at a time, thus causing a Subjacency violation.

Our analysis makes one further prediction: if the pseudo-cleft construction involves movement, we expect it to be blocked over a double *wh*-island, and this prediction is borne out:

(9) a. Me pregunto si sabe por qué Andrés visitó el Museo del Holocausto.
'I wonder if he knows why Andrés visited the Holocaust Museum'

b. *Lo Op$_i$ que me pregunto [$_{CP}$ si sabe [$_{CP}$ por qué [$_{IP}$ Andrés [VP t$_i$ [VP visitó t$_i$ ... fue el Museo del Holocausto.
What I wonder [$_{CP}$ if he knows [$_{CP}$ why [$_{IP}$ Andrés [$_{VP}$ t$_i$ [$_{VP}$ visited t$_i$ ... was the Holocaust Museum

In (9b) two CPs are crossed, causing Subjacency to be violated.

Extraction is also blocked from adjuncts:

(10) a. Andrés vino a la ciudad para visitar el Museo del Holocausto.
'Andrés came to the city to visit the Holocaust Museum'

b. *Lo Op$_i$ que Andrés vino a la ciudad [$_{CP}$ para visitar t$_i$ ... fue el Museo del Holocausto.
What Andrés came to the city [$_{CP}$ to visit t$_i$ ... was the Holocaust Museum

The ungrammaticality of this example can be explained by assuming that the adverbial clause is not L-marked, thereby constituting a barrier from extraction. Thus, in (10) the moved element and its trace fail to be 1-subjacent.

We will conclude, then, that *Wh*-movement is actually involved in pseudo-cleft constructions in Spanish. Therefore, all conditions that restrict movement are met regarding the focalization of these elements, as required by the principles of Universal Grammar.

### 3. The structure of pseudo-clefts and the nature of the copula:

Let us now turn to analyze the structure of pseudo-clefts. The sentences in (1-4) can be analyzed in three parts. They contain what looks like a relative clause, acting as a subject, a form of the Spanish copula *ser* and a subject complement, which may be termed **the focus**. The bracketed clauses in (1-4) are similar to relative clauses in that they contain either an overt or a covert relative operator which binds its trace after *Wh*-movement has operated and is also coreferential with the element in focus position:

(11) [A quien$_i$ llamó t$_i$ Marta] fue a Felipe González$_i$.
'The person (who) Marta called was Felipe González'

(12) [Lo Op$_i$ que reparó t$_i$ Andrés] fue el televisor$_i$.
'What Andrew repaired was the TV set'

When the focus is [+ HUMAN], as in (11), the relative clause can be introduced by either 'article + *que*' or '*quien*', and when the focus is [- HUMAN], as in (12), the relative clause is introduced by '*lo que*'. As represented in our structure (5), these focus phrases do not undergo movement, but are base-generated in their S-structure position. Possible focus constituents of pseudo-clefts include NPs, VPs, PPs, AdjPs, and AdvPs. However, due to presentational expediency, only NPs in focused position will be the object of study in this paper.

Let us now examine the nature of the copula. Two types of pseudo-cleft sentences are customarily distinguished, namely, specificational and predicational pseudo-clefts, as argued in Akmajian (1970). In order to characterize this dichotomy, it could be useful to consider a sentence like (13), which has both readings (14a-b):

(13) Lo que Sandra había dibujado era basura.
'What Sandra drew was a piece of trash'

(14) *Specificational reading*
a. [[Sandra drew x], [x = a piece of trash]]
*Predicational reading*
b. [[Sandra drew x], [x is a piece of trash]]

In (14b) the copula *is* means 'has the property of'. That is, the predicational reading of (13) is 'what Sandra drew has the property of being a piece of trash'. By contrast, the meaning of specification in (14a) approximates the meaning of identification (thus the 'equal' sign). That is, the specificational reading of (13) is 'what Sandra drew is to be identified as a piece of trash'.

Our sentences (1-4) are characterized as specificational. In Akmajian's words, "the initial clause of the pseudo-cleft contains [...] a semantic 'gap' which must be 'filled' or specified by the focus item...". That is, these pseudo-clefts are instances of equational predicates in which one of the terms is the relative clause and the other the focus phrase. Let us illustrate this with sentence (1a), repeated below for convenience:

(15) a. Quien está cantando es María.
b. [[x está cantando], [x = María]]

We can then conclude that the copula involved in our examples (1-4) is equivalent to an 'equal' sign, that is, it is an equational predicate. Later in our analysis, we will explore the implications of analyzing pseudo-clefts as copular-equational constructions.

### 4. Syntactic account of the connectedness revealed in pseudo-clefts:

One of the purposes of the present paper is - in a preliminary way - to point to what may be considered to be one of the most significant syntactic properties of pseudo-clefts, i.e. the connectedness between elements of the relative clause and the focus. Furthermore, an attempt is made to provide a syntactic account of this connectedness. For the purpose of illustrating what is meant by connectedness here, let us consider the contrasts in (16-19) below:

(16) a. Al que vi ayer fue a Pedro.
'The person (who) I saw yesterday was Pedro'
b. *A la que vi ayer fue a Pedro.

(17) a. A la que vi ayer fue a Rocío.
'The person (who) I saw yesterday was Rocio'
b. *Al que vi ayer fue a Rocío.

(18) a. A los que saludé ayer fue a mis sobrinos
'The persons I greeted yesterday were my nephews'
b. *Al que saludé ayer fue a mis sobrinos

(19) a. A las que saludé ayer fue a mis sobrinas
'The persons I greeted yesterday were my nieces'
b. *A la que saludé ayer fue a mis sobrinas

Following Plann (1980), we assume that these constructions have a silent antecedent which we marked by Ø and which heads the NP that includes the relative clause as its adjunct, as illustrated in our proposed structure (5). The number and gender features of this silent antecedent are recoverable from the features displayed by the article preceding *que*. Thus, the article *el* in (16a) identifies both the antecedent and the focus *Pedro* as singular/masculine, whereas the article *la* in (17a) agrees with the antecedent and the focus *Rocío* in the features singular/feminine. By the same token, the article *los* in (18a) identifies both the antecedent and the focus phrase *mis sobrinos* as plural/masculine, whereas the article *las* in (19a) agrees with the antecedent and the focus *mis sobrinas* in the features plural/feminine. By contrast, the ungrammaticality of examples (b) in (16-19), seems to be due to the fact that the features of the article (which is part of the relative operator) and those of the focus phrase do not agree. As we have shown, these constructions display some type of connectedness across the copula.

There is one further realization of the agreement relation between the relative clause and the focus constituent. It concerns those pseudo-cleft constructions which involve a prepositional focus phrase. As we can observe in our sentences (4a-d), repeated below as (20-23) for ease of exposition, when a preposition precedes the 'article + *que*' or '*quien*' , the focus phrase must be preceded by an identical preposition:[3]

(20) a. De la que/de quien me acuerdo mucho es de Lidia.
'The person I think about a lot is Lidia'
b. *De la que/ de quien me acuerdo mucho es Lidia.

(21) a. Con el que/con quien salgo mucho es con Marcos.
'The person with whom I go out a lot is Marcos'
b. *Con el que/con quien salgo mucho es Marcos'

(22) a. Por donde paso siempre es por el estadio.
'The place I always pass by is the stadium'
b. *Por donde paso siempre es el estadio.

(23) a. De lo que habló fue de la película.
'What he talked about was the movie'
b. *De lo que habló fue la película

We can posit that this preposition is used to ensure that the focus phrase has the same Case and function as the silent antecedent in the relative clause.

Further evidence of this relation between the focus and the relative clause is provided by Case agreement. When the focus is [+ HUMAN] the 'article + *que*' or '*quien*' are preceded by a personal a in those cases in which the focus realizes the function of direct or indirect object, as shown in (24) and (25), respectively:

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[3] Campos (1993) argues that, in some dialects, the preposition placed before the focus phrase is optional if it contains a [-HUMAN] noun.

(24) A la que/a quien llamé ayer fue a Marta.
'The person (who) I called yesterday was Marta'

(25) A la que/a quien escribí ayer fue a Marta.
'The person (who) I wrote yesterday was Marta'

By means of this strategy, the focus and the silent antecedent in the relative clause agree in Case and function. Thus, they both share Accusative in (24), and Dative in (25). This is not surprising if we take into account that both the focus and the relative are subject to the same selectional restrictions imposed by the matrix verb of the relative clause. This follows if they are both the arguments of the same verb, namely, *llamar* in (24) and *escribir* in (25). Thus, they receive the same θ-role and Case. However, this would create an apparent conflict with the θ-Criterion. Furthermore, whereas the relative operator is directly θ-marked by the verb at D-structure, the focalized phrases are in a D-structure position to which no θ-role is assigned. To solve this problem we can posit that the proposed coindexation between the relative operator and the focalized element indicates something more than mere coreferentiality. By means of this coindexation we can account for the agreement relations (agreement in number, gender, Case and θ-role) between these elements in the relative clause and the focalized phrase:

(26) [A la Op$_i$ que llamé t$_i$ ayer] fue a Marta$_i$.

Accusative Case
Patient θ-role
Singular
Feminine

A chain would then be formed in which the relative operator, whose θ-role is assigned in its D-structure position, shares it with the coindexed focalized element *Marta*. The trace of the operator is Case-marked at S-structure, allowing Case to be realized on the antecedent, and sharing it with the chain.

A similar analysis has been proposed for left-dislocating constructions in which the focalized element cannot be directly θ-marked by the verb at D-structure.[4] This is also resolved by means of a coindexing mechanism in which the focalized element is coindexed with a resumptive pronoun, as illustrated below:

(27) A María$_i$ Juan la$_i$ vio ayer.
'As for Maria John saw her yesterday'

By means of coindexation, both the focus and the resumptive clitic form a chain whose members are the 'duplication' of the same category. These coindexation mechanisms have the effect of preserving the structural relationships between the coindexed categories.

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[4] See Hernanz and Brucart (1987) and Campos and Zampini (1990) for two different analyses of left-dislocation constructions in Spanish.

## 5. Conclusion:

In this paper we have provided evidence in support of the claim that *Wh*-movement is involved in Spanish pseudo-clefts. We have also provided a unified account of Spanish pseudo-cleft and left-dislocation constructions. Both constructions involve a focalized element which cannot be directly θ-marked by the verb at D-structure. Our proposal is that these constructions display a connectedness between elements of the relative clause and the focus, and we have attempted to account for it in syntactic terms by claiming that not only their relation of coreferentiality, but also the Case and θ-role agreement can be captured by means of coindexation.

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# SYNTACTICIZATION OF AFFECT

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## 1. Introduction

Linguistic descriptions have given a great deal of attention to ideational (Halliday 1985) information (action, agent, recipient, tense, number, place, etc.) and little attention to affective or expressive (Lyon 1977) information (the speaker's attitude, emotional affect). The purpose of this paper is to draw attention to the latter. There are various techniques in language, both suprasegmental and segmental, for coding affect. The segmental techniques range from the inclusion of lexical and morpho-syntactic elements to the use of syntactic constructions and word order. This paper focuses on codification of affect via syntactic means, using data from Chinese. Mandarin has a cluster of syntactic constructions that are mainly used for expressing the speaker's attitudes and, interestingly, these constructions are essentially used for conveying negative feelings of the speaker.

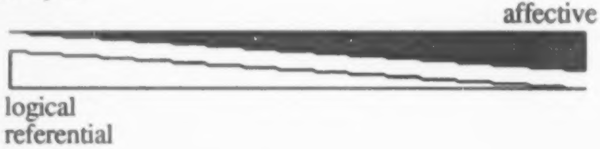
That affect can be coded by syntactic means should be expected, for language serves to communicate attitudinal/affective information as much as referential. As Ochs (1986:24) states, 'All sentences expressed in context will have an affective component'. Thinking and feeling are intertwined in linguistic expressions. Chinese characters certainly indicate that the ancients considered the two to come from the same source: the heart. There is no qualitative distinction between messages that come from thinking and those from feelings -- in Chinese writing both types of process are represented with characters containing the heart radical, as shown in (1).

| (1) | a. xīn 'heart' | b. xiǎng 'think' | c. ài 'love' | d. wù 'hate' |
|---|---|---|---|---|
| | 心 | 想 | 愛 | 惡 |

The linguistic expressions that we utter, whether words or constructions, logical or illogical, are inevitably the product of the feeling human being. Even in a formal statement the affect conveyed is that of the speaker's choice of stance, namely, the feigning of an impersonal, indifferent, or objective attitude.

Affectual expressions are those that convey the speaker's emotional intensity or attitude (distanced, negative, pejorative, positive, endearing, etc). The motivation for a speech form can be more prominantly affective or referential/logical. Most are somewhere in between.

(2) Message conveyed



## 2. Linguistic expressions of affect

The expression of affect through prosodic, phonological or morphological means has been relatively widely reported. For example, Stankiewicz (1964) gives many examples in Slavic and Romance languages (especially Italian and Spanish) of morphology used for emotive purposes. Ochs (1986) discusses the linguistic expression of affect in Samoan, as does Cook (1994).

Outside of numerous accounts of Mood (e.g. Imperative, Subjunctive), which may be said to be a type of affect, the expression of affect by syntactic constructions has seldom been discussed. An exception is Left- and Right-Dislocation in languages like French (Lambrecht 1981, Ashby 1988 and Blyth 1994). The following examples are from Blyth (1994).

(3) Rectangulaire, cette table! (=Too rectangular, too boxy, too...)
(4) Ils sont bizarres, les Anglais!
(5) Elle fait beaucoup de sports, Annick hein?!

Blyth argues that right dislocations in assessments are primarily emotive signs and secondarily referential signs. They are emotive in the sense that they index the speaker's degree of commitment to his or her characteriation of the referent. 'I'm convinced that Annick is athletic, I'm persuaded that Alice is strange, and I'm sure that the Brits are weird!'

## 3. Codification of affect in Chinese

The rest of this paper will focus on Chinese examples. One way of grammatically expressing the emotive aspect of a message is through the use of lexical words that are de-lexicalized to serve as markers for affect. These lexical words do not have inherent negative meaning but are used in metaphorical extension and further grammaticized as affixes for expressing the speaker's subjective attitude toward the event. For example, in Taiwanese the word *khì* 'go' when used as suffix after a certain set of verbs has a negative meaning (Chen 1992): *bé khì* (lit. buy go) '[Too bad that] someone bought it', *chiáh khì* (lit. eat go) '[Too bad that] someone ate it up.' In addition, codification of the speaker's affect can also be conveyed by sentential particles, syntactic constructions.

(6) Degree of grammaticalization of affect

Lexical ------------------------------------------------→ Grammatical

| | metaphorical extension | affixes, particles | syntactic constructions |
|---|---|---|---|
| e.g. *luckily* | *chī* 'eat' | *ba* [mitigating] | Passives |
| *unfortunately* | T: *khì* 'go' | *la* [pleading] | reduplicatives |

Due to considerations of space, in what follows we will only give examples that are more on the grammatical end of the continuum. These are: (a) sentence-final and sentence-initial particles, (b) reduplicative constructions, (c) sentential constructions whose word orders are not the normally expected SVO, which is a basic word order in Chinese, and (d) the use of question words for non-question purposes. These structural devices essentially are the speaker's way of signaling to the hearer, 'Take note: this is how I, the speaker, feel.'

## 4. Sentential initial and ending particles

Chinese has a group of sentential ending particles for encoding the speaker's attitudes. Cheng & Tian (1992) lists the following: ***de, ne, le, ma, ba, a, la, wa, bei, me, you, ba li, ba le, eryi.*** These particles (*yuqi zhuci* in Chinese, literally tone of voice helping words) do not have any lexical meaning but are there to express the speaker's emotions. For example *ba* in general has a **softening** effect. It de-emphasizes the speaker's assertiveness, thus lending a more pleasant or polite tone of voice to the message, (7b). It also reduces the harshness of a command, (8b). On the other hand, the particle *a* is for a surer and more assertive attitude, (7c). In a command it is used to urge the addressee to take action, as illustrated in (8c). Notice these particles have to be translated in English by independent phrases or lexical words, as shown in the brackets.

(7) a. Tā zǒu le. PLAIN
3sg go ASP
'He has left.'
b. Tā zǒu le ba. MITIGATING
3sg go ASP PRT-ba
'He has left,[ I suppose.]'
c. Tā zǒu le ā. ASSERTIVE
3sg go ASP PRT-a
'He has left, [really.]'

(8) a. Chī. eat 'Eat!' PLAIN
b. Chī ba. eat PRT-ba 'Let's eat; please eat.' POLITE
c. Chī a. eat PRT-a 'Do eat! [why wait?]' IMPATIENT

Taiwanese also has several particles for coding the speaker's attitudes, as exemplified in (9) and (10). In a command, the particle *ò*, as in (9b), conveys the speaker's encouragement, *là* in (9c) indicates the speaker's urging to the point of begging, and *kong* expresses the speaker's misgiving about the action, (9c).

(9) a. Khì. go 'Go!'
b. Khì ò. go PRT-ò 'Go, [since that's what you should.]'
c. Khì là go PRT-là 'Go, [please, please.]'
d. Khì kong. go PRT-kong 'Go, [if you really want to.]'

Sentence initial particles are also used to express attitudes. Taiwanese *hiò*, (10), expresses the speaker's puzzlement and *ta*$^n$, worry, as in (11b).

(10) Hiò, ài khì ko m̄ kà$^n$ khì.
PRT, like go yet not dare go
'[Really,] [he] likes to go yet wouldn't dare to go. [Funny, isn't it?]'

(11) a. I ū beh lâi bô? PLAIN
3sg has want come not
'Is he is coming?'

b. Ta$^n$, i ū beh lâi bô? WORRIED
PRT, 3sg has want come not
'Is he coming [at all]? [Why hasn't he showed up yet?]'

## 5. Reduplicatives

Many repetitive constructions are used for emotive purposes. Reduplication of verbs conveys an informal, softer attitude on the part of the speaker. A very common reduplication is the Verb$_i$ (yi) Verb$_i$ construction, which has a mitigating tone of voice, as shown in (12)-(13). Reduplication of adjectives (i.e. stative verbs) also has the effect of reducing intentensity, as seen in (14).

(12) a. Wǒ xiǎng.
1sg think 'I think'
b. Wǒ xiǎng (yi) xiǎng.
1sg think one think 'Let me give it a thought.'
(13) a. Kàn
look 'Look [at it].'
b. Kàn kan
look look 'Take a look.'
(14) a. hóng
red 'red'
b. hóng hóng
red red 'sort of red'

Some reduplicated suffixing particles express the speaker's intensity or exaggeration. The (a) sentences in the following examples, which contain only a single adjective (stative verb) morpheme, are in the nature of a factual report; whereas the (b) counterparts, which contain reduplicaives, express more vividly the feeling of the speaker, 'too much'. These reduplicatives themselves do not have lexical meanings.

(15) a. Wūzi hěn luàn.
room very mess
'The room is messy.'
b. Wūzi luàn-zao-zao.
room mess PRT PRT
'The room is a total mess.'
(16) a. Tāng hěn rè.
soup very hot
'The soup is hot.'
b. Tāng rè-hū-hu.
soup hot-PRT-PRT
'The soup is piping hot.'

Reduplication of morphemes or particles for attitudinal purposes is quite common in Mandarin. Further examples are given by Chao (1968), who notes, 'Besides the general meaning of liveliness and connotations of much ado expressed by much asaid, various syllabic types have somewhat varied implications. [A construction of this type] usually has a favorable connotation. Even words normally of unfavorable meanings will have an opposite effect when reduplicated.' (Chao 1968:209)

Taiwanese is especially rich in this type of affect expression, as shown below. Note that the reduplicatives do not have any independent lexical meaning.

| | | | | | |
|---|---|---|---|---|---|
| (17) | a. | ō | black | 'black' | PLAIN |
| | b. | ō-sə̂sə̂ | black PRT PRT | 'black' | NEGATIVE |
| | c. | ō-kàⁿkàⁿ | black PRT PRT | 'black' | DISGUSTING |
| | d. | ō-màmà | black PRT PRT | 'black' | SCARY |
| | e | ō-sìmsìm | black PRT PRT | 'black' | POSITIVE |
| (18) | a. | bān | slow | 'slow' | PLAIN |
| | b. | bān-tùtù | slow PRT PRT | 'slow' | FRUSTRATING |

6. 'Benefactive' case

Some grammatical case markers, such as *gěi* 'for the benefit of' and *bèi*, the passive/agentive marker, are more than simple case markers. They also can convey the speaker's attitude toward the event s/he is reporting. A command sentence with the benefactive *gěi* 'give/for'+*wǒ* 'I' is much stronger in emotional color than one without. It renders an order harsher and a request more pleading.

(19) a. Chū qu.
exit-go 'Go out; get out'
→b. (Nǐ) gěi wǒ chū qu!
2sg for 1sg exit go 'Beat it!'
(20) a. Zuò zhe
sit ASP 'Sit; please sit'
→b. (Nǐ) gěi wǒ zuò zhe.
2sg for 1sg sit ASP 'Sit and don't you dare to move about!'

The disposal *bǎ*-construction, as in (21), is neutral as to the speaker's attitude. But the co-construction of *bǎ* with the marker *gěi* (which means 'give' when it functions as the main verb), i.e. the structure *bǎ*+NP *gěi*+V, expresses the speaker's negative view of the action (Wang 1985:85). (BA: disposal marker, also referred to as object marker)

(21) a. Tā bǎ yú chī le.
3st BA fish eat ASP
'He ate the fish.'
→b. Tā bǎ yú gěi chī le.

3st BA fish GEI eat ASP
'[Too bad that] he ate (up) the fish.'

In addition to the morphological items discussed so far (i.e. particles, reduplication of particles, and 'case' marker), the language also has a group of grammatical constructions that can be used for expressing the speaker's attitude. These are: (a) the so-called adversative passives, (b) a sentence type called *ling zhu shu bin ju*, (c) a set of constructions which utilize the wh-question word and repetition, and (d) reduplicative phrases. These are discussed in the following sections.

## 7. Adversative 'passives'

The so-called adversative 'passives' with passive markers *ràng, jiào, gěi, zāo,* and *ái* typically have negative meanings, though not in all cases (Chen 1994). These markers essentially stress the notion that the impact of the action denoted by the verb is beyond the control of the grammatical Subj; this is exploited to code the negative attitude of the speaker toward the event 'Too bad that ...' The following pairs of sentences illustrate this. (PM: Passive Marker)

(22) a. Wǒ kànjiàn tā. Active PLAIN
1sg see 3sg
'I saw him.'

b. Tā bèi wǒ kànjiàn. Passive ADVERSATIVE
3sg PM-BEI 1sg see
'He was seen by me, [too bad for him.]'

(23) a. Fángzi mài le. PLAIN
house sell ASP
'The house was sold.' '[They] sold the house.'

b. Fángzi gěi mài le. ADVERSATIVE
house PM-GEI sell ASP
'The house got sold, [too bad!]'

In an article in a Chinese language newspaper reporting the case of the missing Brach heiress

(24) Tā zuìhòu bèi rén kànjian ...
3sg last PM-BEI people see
'She was last seen ...'

the Chinese sentence unintentionally implies that she was caught red-handed doing something not supposed to be seen. This sentence obviously has its source in an English passive.

## 8. The *ling zhu shu bin* sentences

A construction of the *ling zhu shu bin* type (Guo 1990) communicates affect not by means of the meanings of the lexical and grammatical components but because of the pattern as a whole. For example, the *zoo* in (25) is reported by the speaker as the sufferer of the event of the tiger's running away; in (26) it is reported merely as a location whence the tiger ran out.

(25) Dòngwùyuán pǎo le yī zhī lǎohǔ.
zoo run ASP one CL tiger
'A tiger ran away from the zoo.'

(26) Yǒu yī zhī lǎohǔ cóng dòngwùyuán pǎo chū qu.
have one CL tiger from zoo run out
'A tiger ran away from the zoo.'

None of the lexical meanings of the words themselves are adversative. However, the construction, with subject and object in possessive relation

$$\text{Subject}_{\text{possessor}} \quad + \text{VERB}_{\text{intr}} \quad + \text{Agent}_{\text{possessed}}$$

expresses the speaker's feeling that it is too bad that the event happened. Sentences like (27) and (28) also belong to this construction.

(27) Tā sǐ le fùqin.
he die PERF father 'His father died on him.'

(28) Tā diào le liǎng kē yá.
he fall two CL teeth 'He lost two teeth.'

9. Wh-question words

Question words are also used for expressing the speaker's attitudes, not just for asking questions. When co-constucted with repetitive Subj NP, main verb or a classifer functioning as particle, a question word encodes pejorative or snide attitudes, as shown in (29)-(33). ((31)-(32) taken from Meng 1982)

(29) a. Nǐ chī shěnme? PLAIN question
2sg eat what
'What do you eat?'

b. Nǐ chī shěnme nǐ? SNIDE remark
2sg eat what 2sg
'What kind of junk are you eating' or 'You shouldn't eat!'

(30) a. Nǐ niàn shěnme shū? PLAIN question
2sg read what book
'What are you reading?'

b. Nǐ niàn shěnme shū nǐ? SNIDE remark
2sg read what book 2sg
'You call this 'study'?'

c. Nǐ niàn ge shěnme shū? SNIDE remark
2sg read CL what book
'You study! That's a joke! You don't know a thing about studying!'

(31) Nǐ jǐ shěnme jǐ? HOSTILE

you push what push
'Stop pushing me! [on a crowded bus]'

(32) Dǎ pūkèpái zuì méiyìsi le, dǎ pūkèpái. NEGATIVE
play card most boring ASP, play card
'It's most boring playing cards!'

(33) Tā xiě shěnme xìn tā! SNIDE
3sg write what letter 3sg
'He doesn't know a thing about writing!'

## 10. Concluding remarks

Many of these syntactic strategies of affect expression are of two essential types. The first involves an unusual position of the Agent of the main verb, as in Adversative Passives and the *Linzhushubin* construction mentioned above; the second uses repetition to break up the normally anticipated order. All these are attention getters. Altogether, they are evidence that syntax can serve affective functions as well as referential ones. In other words, syntax has a heart too.

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# DOUBLE *DONT* CONSTRUCTIONS, RELATIONAL NOUNS, AND NULL POSSESSORS

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## 1.0 Introduction

Inalienable possession (iposs) is a fertile domain for linguistic theory. First studied because of its syntactic ramifications, it is now at the crossroads of syntax, semantics, and pragmatics because no one of these components/ modules can fully account for the data. This paper will examine a syntactic analysis of French iposs and point out areas which need fine-tuning in order to attain higher descriptive adequacy. When solutions are proposed, they will generally take account of semantic and/or pragmatic principles that should supplement the syntax rather than replace it.

Iposs poses a challenge on both morpho-syntactic and semantic grounds. Morpho-syntactically, there is no one French structure that unequivocally signals it. The most commonly cited categories associated with it are the definite determiner and dative clitic, as in

(1) Je lui ai essuyé le front. 'I to-him wiped the forehead.'

However, both these syntactic correlates arise in contexts without inalienables, e.g. the clitic as an dative of interest, and of course the determiner as a marker of genericness or, conversely, referential precision. Recent generative treatments have attempted to treat inalienable construal in structures like (1) as a consequence of binding theory (cf. Guéron 1985, Authier 1988)

Semantically, the boundaries of inalienability are far from clear. The dative clitic +article structure is limited to body parts in standard French, whereas in other Romance languages it extends to clothing and other personal possessions, i.e. what Bally 1926 calls the "personal sphere". Yet, French treats personal sphere items like body parts in absolute constructions, as in

(2) Pourquoi tu sors comme ça le col tâché? 'Why are you going out like that the collar stained?'

where the possessor is not explicitly marked with a possessive adj.

We will focus on a g-b work, Tellier 1991, which raises both these questions as regards a hitherto unexamined structure, the French double *dont* construction (DDC), which allows inalienables of a far greater semantic range than the "classical" iposs structures. Tellier proposes an essentially syntactic analysis to handle DDCs, which would be accounted for as a by-product of her Universal Licensing Principle. This paper will question certain assumptions underlying this analysis and argue that non-syntactic modules need to be invoked for a full account of French iposs.[1]

## 2.0 DDCs

DDCs are genitive relative clauses in which the relative head is linked to at least two implicit complements within distinct NPs, as illustrated in (3):

(3) Voilà un homme dont la franchise se voit dans les yeux. 'There is a man of-whom the frankness can be seen in the eyes.'

Tellier claims that DDCs are instances of parasitic gaps, a phenomenon originally noted in radically different structures like

(4) Which books did you file without having reviewed?

Both (3) and (4) evince double gaps, one a routine trace, and another that is subject to special conditions. Following Chomsky 1986, Tellier analyzes DDCs as a double chain: the first chain links the antecedent binder with its trace. The second chain links a null operator with the PG, the one difference being that the English landing site for the null operator is the Specifier of **CP**, while in the DDC the null operator occupies the Specifier of a **DP**, since the PG here is an adnominal gap. Thus, the S-structure for (3) and (4) would be, respectively:

(5) Voilà un homme$_i$ dont$_i$ [[la franchise t$_i$] se voit [dans [$_{DP}$Op$_i$les yeux e$_i$]

(6) Which books$_i$ did you file t$_i$ [without[$_{CP}$Op$_i$[$_{IP}$having reviewed e$_i$]]]

DDCs and "classical" inalienable constructions like *Je lui ai coupé les cheveux* 'I to-him cut the hair' share this property of null operator in the [Spec,DP] of the inalienable.

For DDC's, the nature of the antecedent binder and trace of the first gap seem straightforward. Less clear is the semantic nature of the DDC's head noun governing the PG. Tellier claims that the second gap is restricted to relational nouns, exemplified already in (3), or process deverbal nouns like *exécution*. The relational category includes picture Ns, kin/social relations, personal characteristics, part-whole expressions (body parts, parts of inanimate or abstract wholes, e.g. book's jacket, journey's end), as detailed in Stockwell et al. 1973. For Tellier, what allows relational nouns to head a PG in a DDC is the provision their lexical structure makes for an adnominal argument. Alienables, on the other hand, allow a possessor only in an adjunct position and hence cannot occur as the second antecedent of a DDC.

## 3.0 Problems

### 3.1 Argument/Adjunct Dichotomy

Difficulties arise, however, when we look more closely at the range of nouns that can head the second gap. As pointed out, DDCs are interesting because they allow a much greater extent of inalienable types than we observe in classical inalienable structures like dative +definite article. Heading the PG we find not only the expected body parts, but social relations, personal characteristics, and objects typically but not obligatorily possessed. In this section, I will examine the latter two categories, subsumed under "personal sphere".

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[1] A paper which has been a methodological and epistemological inspiration for this one is Ruwet 1991, which brings out semantic and pragmatic objections to the Unaccusativity Hypothesis, but without rejecting an ultimately syntactic solution.

The peculiarity of this category is its cross-linguistic fence-sitting status: in numerous languages, both typologically akin to and distant from French, it is morpho-syntactically indistinguishable from "true" inalienability, while other languages treat its tokens in identical fashion to alienables. Articles of clothing and other personal effects, for instance, are notorious fence-sitters. In standard French, their status is structure-dependent: the classical dative +article excludes them:

(7) *Je me suis sali le pantalon. 'I to-me dirtied the pants.'

whereas adjunct prepositional phrases and absolute constructions allow them just as readily as body parts:

(8) On m'a secoué par la ceinture. 'They shook me by the belt.'

is as grammatical as

(9) On m'a secoué par le bras. 'They shook me by the arm.'

In DDCs, articles of clothing appear as commonly as prototypically relational nouns, e.g.:

(10) C'est une mère martyre dont les enfants cachent toujours les chaussures, les clés et même les lunettes. 'She is a martyr of a mother of-whom the children are always hiding the shoes, the keys and even the glasses.'

Personal sphere Ns in DDCs may occur with or without null possessors. In (11) and (12), the nouns commanding the second gap, *paresse* and *maîtrise de soi* respectively, are coindexed with the antecedent of *dont*:

(11) Il s'agit d'un collègue dont les bonnes intentions cèdent souvent la place à la paresse. 'It's about a colleague of-whom the good intentions often yield to the laziness.'

(12) Le romancier, dont la vie coïncide avec la plus parfaite maîtrise de soi, ... s'est senti troublé devant la caméra. 'The novelist, of-whom the life coincides with the most perfect self-control.' (Anne Andreu, 'Le dernier été à Tanger: magnifique!', *L'Événement du jeudi*, Nov. 22-28, 1990, p. 124; cited by Tellier, p. 100.)

but in (13) and (14), the laziness and self-control must be construed as generic because of their verb *rechercher*, which rules out a possessive relation at the time of utterance:

(13) C'est un vaurien qui voit le travail comme un outil du diable et dont les amis recherchent eux aussi la paresse. 'He's a good-for-nothing who regards work as a tool of the devil and of-whom the friends also seek out idleness.'

(14) C'est un névrosé dont la vie consiste en une recherche interminable de la maîtrise de soi. 'He's a neurotic of-whom the life consists of an endless quest for the self-control.'

Here is further evidence of personal sphere's variability: Tellier 1991:148-149 claims that in (15-17), *jardin*, *bibliothèque* and *chien* cannot be construed as belonging to the antecedents of *dont* because these heads take alienable possessors. The asterisks indicate the supposed impossibility of possessive construal for these three Ns:

(15) *C'est un amoureux de la nature$_i$ dont$_i$ toutes les fenêtres $t_i$ donnent sur le jardin $e_i$. 'He's a nature-lover of-whom all the windows look out onto the garden.'

(16) *On a arrêté cet espion$_i$ dont$_i$ les microfilms $t_i$ étaient dissimulés dans la bibliothèque $e_i$. 'They arrested that spy of-whom the microfilm was hidden in the library.'

(17) *Voilà quelqu'un$_i$ dont$_i$ le chat $t_i$ ne s'entend pas du tout avec le chien $e_i$. 'There's someone of-whom the cat doesn't get along at all with the dog.'

My informants agreed for *bibliothèque* but not for *jardin* or *chien*, and I see no consistent explanation for this difference: one could argue that *jardin*, like *maison* is commonly linked to a proprietor or creator, and that dogs in western cultures are normally pets. Out of context, the more expected sense for a library is that of a public building rather than a particular room in someone's house, but a private library is certainly not ruled out in (16). Tellier suggests that such possessive construals result simply from pragmatics, but the pragmatics catch-all ignores differences between personal sphere nouns and those which are unlikely to be possessed, as in:

(18) *C'est un amoureux de la nature$_i$ dont$_i$ toutes les fenêtres $t_i$ donnent sur la rivière/vallée/promenade champêtre. 'He's a nature-lover of-whom all the windows look out onto the river/valley/country walk.' (ungrammatical as instance of implicit PG-possessor)

Moreover, Tellier's main list of DDCs (pp. 100-102) contains largely abstract possessa, and of these several are just as vacillatingly inalienable as our concrete personal sphere examples. A *discours* of course presumes an inventor, but such a "possessor" is irrelevant for many occurrences of this noun. Likewise, a *langue* implies speakers, whether past or present, but when, for example, we talk of the structure of a *langue*, its relation to its speakers is routinely abstracted away. Similar possessor backgrounding or eclipsing applies, to a lesser degree, to *rhythme*, *naissance*, and *décision*. Why should we consider such abstract possessa as intrinsically relational but relegate concrete personal sphere nouns to the other side of a purported inalienable boundary?

The question is really one of prototypes, i.e. involving the semantic frontiers of relational Ns. The category 'inalienable' has ill-defined boundaries: the fluctuating ±inalienable status of clothing and cultural phenomena like gardens and pets poses problems for argument/adjunct lexical representation. This binary framework poorly accommodates the varying degrees of inalienability observed with the range of nouns which have been traditionally classed as intrinsically relational. For instance, kin terms and spatial relations are probably the "most" inalienable of nouns: the semantic representations of 'mother' and 'side', in whatever context, must allow for an adnominal complement, whether overt or null. These nouns are by their nature unimaginable without an adnominal argument. Less intrinsically relational are body parts: both literal and metaphorical uses can present them as detached, on a par with alienables. Even less obligatorily relational are personal sphere nouns, whether concrete entities like 'wallet' or personal characteristics such as 'patience'. The distinction between body parts and cultural phenomena surfaces notably in non-DDC contexts where a unspecified possessor co-occurs with a non-generic verb, as in

(19) Le menton *(de l'écolier) était collé à la neige carbonique. 'The chin *(of the schoolboy) was stuck to the dry ice.'

vs

(20) On a respecté la décision (du commandant). 'They respected the decision (of the commander).'

Body parts, but not personal sphere nouns, require explicit mention of their possessor in such structures.[2]

The argument-adjunct dichotomy, then, needs to reflect a semantic reality which is far from being a dichotomy. I am arguing for elimination not of the argument-adjunct binarism, but of the assumption that it correlates directly with inalienability. In the case of DDCs, I think we do have binarism: either the 2nd NP of the relative clause is linked to the antecedent of *dont*, via a PG and null operator, or it is not, as seen with generic construals like (13) and (14).

Let us return to the question of whether possessor construal of personal sphere Ns should be handled via pragmatics. Tellier notes that a pragmatic interpretation is always possible for virtually any possessor occurring with the definite determiner, e.g.

(21) un compositeur dont les oeuvres se trouvent toutes dans le coffre. 'a composer of-whom the works are all to be found in the trunk.'

This inferential possibility goes beyond DDCs. It is observable even in English, where the definite article is rarely linked to inalienable possession:

They just sold the house. (-->probably their own house)

But how can we decide, in the case of a non-prototypical inalienable like a personal sphere noun, whether the possessor link is pragmatic or syntactic, i.e. due to a PG? There are three theoretical possibilities for a personal sphere noun:

1. Inalienable status, so that possessor is construed via a PG just like body parts and kin terms. (e.g. with *maison* or abstract Ns like *poids*)

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[2] See Authier 1988 and Tellier 1991:156 for constraints on null possessors, which this paper examines in section 3.3.

2. Alienable status, i.e. lack of an argument precludes a possessor construal. (e.g. with generic interpretation.)
3. Alienable status, but with pragmatically determined possessor. This is Tellier's analysis for several instances of personal sphere nouns.

In fact, though, we face a dichotomy, since 1 and 3 are theoretical choices for essentially the same possessor interpretation. That is, in

(22) C'est un PDG dont les enfants sont moins aimés que le yacht. 'He's a chief exec of-whom the children are less loved than the yacht.'

whether the PDG is construed syntactically (1) or pragmatically (3) as the yacht's owner is impossible to determine on purely semantic grounds.

Out of expediency, one could simply handle all cases of such interpretation as pragmatic if the possessum is a personal sphere N, thus treating such nouns no differently from alienables. This solution would, however, ignore the habitual cross-linguistic status of personal sphere Ns as a category straddling the ±inalienable opposition. It is preferable, on both descriptive and theoretical grounds, to assume that personal sphere nouns would be distinguished from alienables and inalienables by selecting an **optional** adnominal argument, thus reflecting the dual possibility of possessor or generic construal for the personal sphere class.

### 3.2 The definite determiner: Problems inside and outside of DDCs

The French iposs structures which generative linguists have focused on contain a body part with the definite determiner. For Kayne 1975, Guéron 1986, Herschensohn 1989, Authier 1988, Tellier 1991 and others, the definite determiner is a syntactic correlate for inalienability. This section will look at problems which arise if we assume a special syntactic status for *le* in inalienable contexts.

Tellier implies that definite determiner is a marker for DDCs, i.e. as long as the head of the second gap is relational and accompanied by definite article, a DDC is possible. Her analysis follows from the longstanding assumption among generativists that an inalienable occurring with the definite determiner is not an R(eferential) expression. Kayne 1975:169 was the first to propose a special referential status for inalienables. He suggested that the def art +inalienable structure is analogous to generic structures like

(23) The eyes are an important part of the human body.

Kayne notes two syntactic constraints in support of this hypothesis. First, only with dative +definite article do we find an obligatory distributive singular with a plural possessor:

(24) La mère leur a maquillé le visage/*les visages. 'The mother to-them made up the face/*faces.'

vs

(25) La mère leur a maquillé leur(s) beau(x) visage(s) glacial/glaciaux. 'The mother to-them made up their beautiful expression-less faces.'

and

(26) La mère a maquillé les visages de tous ses petits. 'The mother made up

the faces of all her youngsters.'

Secondly, the def. art. excludes adjectives, which freely occur with possessive determiners:

(27) *Comment tu t'es cassé le petit poignet mignon? 'How did you break to-you the cute little wrist?'

vs

(28) Comment tu as cassé ton petit poignet mignon? 'How did you break your cute little wrist?'

The genericness of the inalienable would account for these two syntactic constraints: the distributive singular would be a type representation for the multiplicity of referents, while the adjective would entail a specificness incompatible with the generic.

Tellier 1991:159 assumes that relational nouns are not R-expressions because their reference must be determined with respect to some possessor. Incorporating analyses by Williams 1981 and Higginbotham 1985, she proposes that they select a possessor argument, but no external R(eferential) argument. Non-relational Ns do select this R-argument, licensed by the definite determiner, which closes the Determiner Phrase, the result being a referential expression. With relational Ns, it is via the discharge of the possessor $\theta$-role that the expression is saturated. The determiner would function like an expletive (dummy) element, "consistent with interpretations of expressions like *le frère de Marie*: *le* does not pick a specific referent from the class of brothers that Mary has." i.e. *de Marie*, rather than *le* is what definitizes *frère*. In *le téléphone de Marie*, on the other hand, the head noun's referentiality would be given by *le*, which saturates the external argument and closes the Determiner Phrase, making it a referential expression.

This "dummy" status pertains, crucially, only to the definite determiner. Other determiners would saturate an inalienable in identical fashion to saturation of non-relational Ns, because the inalienable with another determiner is no longer inherently relational, as seen in

(29) Une main était coincée dans la porte. 'A hand was caught in the door.' (cf. Tellier 1991:158)

Here the hand is construed as an alienable object. The indefinite determiner *une* would saturate the R-argument of *main*, referentially indistinguishable from any alienable N.

Those are the essentials of the generativist position. I will now look at counter-evidence to the special status of the definite determiner with inalienables.

1. The distributive singular. Sometimes the singular occurs in a distributive reading with other determiners, e.g.:

(30) Quand j'étais en $6^e$, nous aimions l'institutrice de toute notre âme/*toutes nos âmes. 'When I was in grade 6, we loved the teacher with all our soul/*souls.'

Conversely, with the article the collective plural occasionally arises:

(31) Haut les coeurs! 'High the hearts!' ='Courage!'

Such counter-examples are admittedly rare, but they suggest that there is not a categorical link between distributivity and *le*, or between collectivity and other determiners.

Note that the following all allow either plural or sing. and non-sentence status of *haut les coeurs*

Le sommeil occupe le tiers de notre vie/nos vies.

La conscience de notre/nos vie(s) manquée(s).

Nous continuons notre petite vie.

Il faut nous laisser vivre notre vie.

Pas question de vendre notre âme au mécène le plus cossu.

2. Adjective constraint. As noted in Burston 1981, Julien 1983, and Roegiest & Spanoghe 1991, rather than a total ban on adjectives, the def. art. +inalienable structure rejects only adjectives that merely describe. If the adjective distinguishes e.g. one body part from another, the S is well-formed. Compare:

(32) *Elle a levé les bras argentés. 'She lifted the silvery arms.'

vs

(33) Elle a levé le bras contusionné. 'She lifted the bruised arm.'

However, we must still account for the constraint on descriptive adjectives. Here is a sketch of how to exclude them on semantic grounds. The def. art. normally presents the inalienable as inextricable from a part/whole relation; it confirms the noun's intrinsically relational nature by giving it definite status even if it is the N's first mention. Adding an adjective would give the inalienable a salience incompatible with its "self-effacing" link to the whole.

With the possessive determiner, on the other hand, the inalienable is presented as salient (Hatcher 1944a,b): the possession is explicitly marked, as with alienables, and so the inalienable can be modified as an entity in its own right, like any other noun. Distinguishing adjs. like *droit* and *supérieur* also involve modification of the inalienable, but only to set it apart from other body parts, i.e. they clarify the identity of the inalienable but always as part of a whole. Support for this semantic explanation comes from body part predications with *avoir*, e.g.

(34) Elle a les yeux hypnotisants. 'She has the hypnotizing eyes.'

This structure admits descriptive adjs. because the assertion consists of the quality given by the adj. If the adjective denotes something taken for granted, it does not normally occur after *avoir*, e.g.:

(35) ?Elle a l'oreille droite. 'She has the right ear.'

Through embedding (Julien 1983:142), the *avoir* structure permits co-existence of a descriptive adjective and the part-whole structure signaled by the def. art.:

(36) Elle a levé les bras qu'elle avait tout rouges. 'She lifted the arms that she had all red.'

(37) On lui a littéralement sculpté le nez qu'il avait très gros. 'They to-him

literally carved the nose that he had very big.'

Thus, what Kayne 1975 perceived as a syntactic constraint indicating non-referential status for inalienables can be explained as a semantic repercussion of the part-whole relation which defines inalienability.

3. The def. art. is not the only determiner involved with inalienables. Other determiners (demonstrative, indefinite) also occur in S's where the possessor construal applies to a dative clitic:

(38) Comment lui as-tu cassé un/ce doigt? 'How did you to-him break a/that finger?'

or to a subject:

(39) L'enfant a baissé des/ces yeux si tendres... 'The child lowered such tender eyes/those eyes so tender...'

These examples manifest exactly the same possessor construal for the dative in (38) and subject in (39) as when the inalienable occurs with the def. art., even though the body parts are unequivocally referential, at least with the demonstrative.

In this respect, DDCs are no different from the classical inalienable structures. With *un*, Tellier claims any implicit possessor is an adjunct and therefore impossible:

(40) *Marie, dont les amis ne parlent plus à un fils. 'Marie, of-whom the friends no longer speak to a son.'

Here *un* would absorb the possessor theta-role, leaving the unexpressed possessor *de Marie* with adjunct status, as opposed to the grammatical *...à un des fils*, where *de Marie* receives the possessor theta-role of lexically realized *fils*. Unfortunately for this analysis, *un* often arises with the expected possessor construal in DDCs, especially with abstract Ns. Many of Tellier's examples remain grammatical, with no change in possessor construal, when the definite is replaced by the indefinite determiner, e.g.:

(41) Cette sombre histoire$_i$, dont$_i$ les images $t_i$ s'accordent parfaitement à un rythme $e_i$ et à un ton $e_i$ demi-mondains. 'That dark story, of-which the images perfectly correspond to an rhythm and tone of the demi-monde.'

(42) Le romancier$_i$, dont$_i$ la vie $t_i$ coïncide avec une impressionnante maîtrise de soi $e_i$, s'est senti troublé devant la caméra. 'The novelist, of-whom the life coincides with an impressive self-control, felt troubled in front of the camera.'

Since the DDCs in (41-42) have a VP structure identical to that of (40), we may exclude the preposition from the determinants of grammaticality. I suspect that (40) is bad for the same reason that my informants judged *Je ne parle plus à un fils de Marie* to be stylistically awkward and better expressed with the overt partitive *...à un des fils de Marie*.

I have argued in this section that the def. art. has no consistent syntactic link with inalienables. The constraints noted by Kayne 1975 which would mark such a link, i.e. adjective blocking and obligatory distributive singular, have been shown to be either incomplete and due to semantic-pragmatic factors or not exclusive to the def. art.

### 3.3 Null possessors

A consequence of requiring inalienable heads to be referentially tied to a possessor complement rather than the def. determiner is that a possessor must be locally available for licencing. This constraint would explain the ill-formedness of Ss where the possessor is either unmentioned or too structurally removed from the inalienable, e.g.

(43) Quand Marc a trébuché, *la/sa jambe a été lacérée par la tondeuse.
'When M. stumbled, *the/his leg was lacerated by the mower.'

If the inalienable lacks a local possessor, it must normally occur with a determiner other than *le*, as in (29). With other determiners, the inalienable is treated as any ordinary R-expression, i.e. as alienable.

There is one crucial exception to this. Based on work by Rizzi 1986 and Authier 1988, Tellier concludes that possessor-less relational nouns with the definite determiner are permissible provided that two conditions are satisfied: (1) The referent is arbitrary *pro*, and (2) the context has generic time reference, e.g.:

(44) En Angleterre on coupe les cheveux sans d'abord les mouiller. 'In England they cut the hair without first wetting it.'

vs

(45) *Hier on a coupé les cheveux sans les mouiller.[3] 'Yesterday they cut the hair without wetting it.'

Two objections cast doubt on this analysis. First, to assume that determiners other than *le* correlate with alienability leaves us unable to distinguish (29) from

(46) Je me suis cassé un bras. 'I to-me broke an arm.'

where the clitic *me* rather than the indefinite determiner is the obvious candidate to absorb the $\theta$-role of *bras*.

Secondly, the correlation between generic context and arbitrary possessor is not absolute, as the following show:

(47) Ben oui, la popularité vient de chuter. 'Yes indeed, the popularity has just plummeted.' (Talking about a politician)

(48) La main gauche était enflée et l'avant-bras droit était meurtri. 'The left hand was swollen and the right forearm was bruised.' (Medical report)

Both Ss exhibit inalienables lacking a local possessor, yet in neither is the verb generic nor is the possessor arbitrary. No satisfactory syntactic analysis has been yet proposed to handle such counter-examples. Tellier herself seems aware of such counter-evidence, as when she cautions that the null-subject constraint pertains to data that must be "independent of any discourse or pragmatic context".[4] This stipulation is untenable: after all, virtually every utterance, unless it's a linguist's example, occurs in some discourse and some context, however minimal.

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[3] The genericness stipulation needs closer examination, since it is not difficult to find arbitrary subjects coexisting with punctual verbs, e.g.:
(i) Air Canada a interdit de fumer il y a trois ans.
'Air Canada prohibited smoking three years ago.'

Rather than independence from context, the key is markedness of context: the common feature of (47-48) is that the situation breaks with the norm of part-whole relations, in that the inalienable is mentioned for its own sake rather than as an appendage of the whole. This factor of salience underlies co-occurrence with a possessive adjective rather than definite article (Hatcher 1944a,b), but (47-48) show that the possessive is not required for the inalienable to stand out on its own. The challenge for grammatical theory is to integrate this pragmatic markedness into a presumably still autonomous syntax.[5] Thus, locality constraints may be suspended in certain scenarios, e.g. medical, which highlight the body part for its own sake.

## 4.0 Conclusion

In spite of our questioning of syntactic factors, we still favour explaining the bulk of French inalienable construal phenomena via syntax: most inalienable tokens do obey constraints like locality of possessor. The solution will undoubtedly involve some kind of interface between modules. Since syntax alone cannot account for all the intricacies of French inalienable possession, semantics (cf. the prototype differences between body parts/kin terms vs personal sphere items) and pragmatics (e.g. the nature of the discourse context in determining violations of locality) can undoubtedly help to explain what are anomalies from a purely syntactic viewpoint.

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[4] Tellier 1991:273, note 20.

[5] Thanks to Diane Massam (personal communication) for suggesting pragmatic markedness as an explanation for what appear at first to be disparate counter-examples.

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# "OBLIGATORY PARTICLE MOVEMENT" IN ENGLISH

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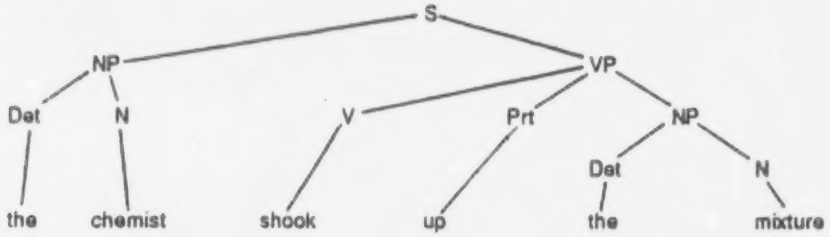
Since the earliest days of transformational generative grammar sentences like

(1. The chemist shook up the mixture.
(2) The chemist shook the mixture up.

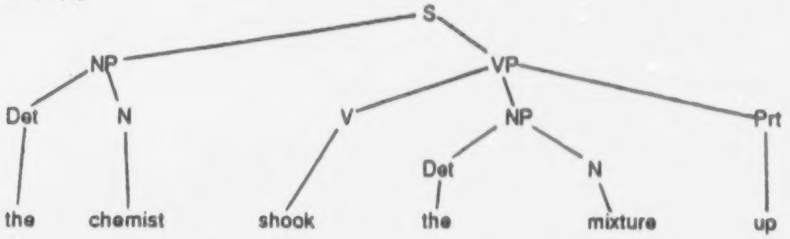
have been used as examples of syntactic transformations and evidence of the need for such transformations. In fact, Chomsky (1957) offers the following examples:

(82) (i) the police brought in the criminal
(ii) the police brought the criminal in (75).

According to Jacobs and Rosenbaum (1968), "the word 'up' is a particle in both sentences [1 & 2], and both sentences have exactly the same deep structure . . .. Both sentences are synonymous. The transformation which relates them is the *particle movement transformation*" (105). Generative grammarians have differed on the details of this common deep structure, but we can assume that (1) and (2) share a deep structure which is close to the tree diagram for (1):



This structure may be transformed by Particle Movement into the surface structure of (2):



For nearly three decades sentences like (1) and (2) appeared in nearly every generative linguistics textbook. The first edition (1974) of Fromkin and Rodman, arguably the most widely sold introductory linguistics text of all time, contained a section on Particle Movement. In fact, that text contained sentence

(15) Dick finally decided on the boat. (170)

as an example of ambiguity, since *on* can function as a particle in *decided on* or as a preposition in *on the boat.* Particle Movement appears in Fromkin and Rodman as recently as the third edition (1983). But by the fourth edition (1988) Particle Movement has disappeared, and this disappearance seems to have occurred in other recent textbooks as well.

There are many plausible explanations for the passing of the Particle Movement transformation. In recent years, the attention of generative grammarians has shifted to the more general, more lofty concerns connected with Universal Grammar, and the gritty details of the syntax of a single language no longer occupy them. The development of non-transformational generative grammars has shifted attention away from so-called "movement rules." And within the mainstream of generative grammar the focus on a single transformation, Move Alpha, has lessened interest in details.

I suspect, however, that Particle Movement fell out of favor because it was--or ought to have been--from the start an embarrassing sort of process.

First off, while Particle movement is clearly optional, as we see in (1) and (2), there are some verb-particle strings where the particle cannot occur to the right of the object NP. I know of no one who has ever argued that sentence

(16) *Dick finally decided the boat on.

is grammatical in any variety of English.

Consider once more Chomsky's (1957) example. He states without comment that "we can have forms such as (82) but not (83).

(82) (i) the police brought in the criminal
(ii) the police brought the criminal in
(iii) the police brought him in

(83) the police brought in him." (75)

Chomsky goes on to say that "to allow for the possibility of (82ii) we set up an optional transformation . . . which operates on strings with the structural analysis

(85) $X - V_1 - Prt - NP$

and has the effect of interchanging the third and fourth segments of the string to which it applies" (76). Chomsky goes on to add sentences like (83) can be avoided by making the transformation obligatory when the direct object NP is a pronoun. Or, he says, we could keep the Particle Movement transformation option and specify another, obligatory, transformation that applies only when the object is a pronoun.

Later generative grammarians simply offer sentences like (3) and (4) as examples of the optional/obligatory nature of Particle Movement:

(3) *The chemist shook up it. [starred in original]
(4) The chemist shook it up.

Sentences (3), (4), (9), (10), (19), (20), (21), (22), (23), (24), (25), and (26) are taken as examples from numerous introductory texts of the 1960's and 1970's:

(9) *The applicants filled out them. [starred in original]
(10) The applicants filled them out.
(19) *Some investigators marked down it. [starred in original]
(20) Some investigators marked it down.
(21) *The doctor cut out it. [starred in original]
(22) The doctor cut it out.
(23) He called up her. [noted as obligatory]
(24) He called her up.
(25) *Will you cut out it, please? [starred in original]
(26) Will you cut it out, please?

In their massive compendium of English transformations, a work that distinguishes quite sharply between obligatory and optional transformations, Akmajian and Heny (1975) relegated Particle Movement to end-of-chapter exercises, and they "indicate that a special condition must be placed on the Particle Movement Rule in order to prevent the ungrammatical sentences [like (25)] from being generated" (1978).

Clearly, something is wrong here. For a system that seeks to specify all and only the grammatical sentences of a language using a system of (a relatively few) general rules operating (almost) without exception, the inclusion of optional transformations already represents a significant weakening of the theory. To have a transformation that is blocked, as in the case of (16), from applying to structures that otherwise meet its structural analysis is a further weakening. But to posit a "rule" that normally may or may not apply but which must apply if its right sister is a pronoun is *ad hoc* to the point of being positively embarrassing. However, no one remarked on this at the time, and Particle Movement quietly passed from view.

Recently, however, new complications have come into view. As far as I can tell, no linguist has ever disagreed with the generative grammarians' view that sentences like (3), (9), (19), (21), (23), and (25) are impossible in all (or nearly all) varieties of English. These are textbook examples of the necessity of making Particle Movement obligatory when its right sister is a pronoun. Unfortunately, such "impossible" sentences exist. In two days in September of 1993, I observed sentences (7), (11), and (13):

(7) ***He wanted to help out them.*** NPR 9/93
(11) ***He went in the house and put down something.*** *Cops*, 9/93
(13) ***Can you ring up this?*** campus yogurt shop, 9/23/93

As indicated, sentence (7) was broadcast on National Public Radio, (11) occurred on a re-run of the popular "reality tv" show *Cops* on Fox TV, and (13) was overheard in a food shop in the Tangeman University Center at the University of Cincinnati. None of these sentences occasioned any linguistic or paralinguistic evidence that either speakers or hearers found them in any way remarkable. There was no apparent miscommunication, no evidence of repair, and no sign that anyone noticed that an "ungrammatical" sentence had been uttered. To the best of my knowledge, I was the only person on earth who noted these sentences.

How could such sentences happen?

If these three sentences had been offered as counterexamples to the obligatory-Particle-Movement-with-a-pronoun rule during the period when such sentences were offered as "ungrammatical" examples in nearly all textbooks, a typical generative grammarian would most likely have remarked that they are ungrammatical in "my dialect." But these three sentences were uttered by speakers of Northern or North Midland dialects of American English in contexts where Standard English would be the norm. Elsewhere, I have argued that generative grammarians during the 1970's frequently took the notion of "my dialect" to ludicrous extremes (Mills, 1978). Unless one is engaging in Humpty-Dumpty semantics, it is rather difficult to argue that these sentences arose as a result of dialect differences.

In the heyday of transformational generative grammar, which is when such sentences appeared most often in textbooks, a grammarian would most likely have argued that such sentences arose as a result of "performance errors." That is, native speakers of English "know" that (7), (11), and (13) are ungrammatical, but in the heat of the moment, in the haste of planning and speaking on the fly, speakers "forget" to apply the Particle Movement transformation, yielding sentences which are understandable though ungrammatical. Following Chomsky (1957) we might argue, in fact, that such sentences do not constitute "clear cases" or grammatical or ungrammatical sentences, and we should "let the grammar decide."

Of course, an observant linguist, having noted the embarrassing optional/obligatory nature of Particle Movement, might argue that the occurrence of such sentences today in no way contradicts the grammaticality judgments of two decades ago. In other words, it may be that English syntax is changing and that such sentences are grammatical today. Akmajian and Heny's "special condition" on Particle Movement may be disappearing. Cases of "rule generalization" are not unheard of.

For a quantitative linguist, particularly for a reductionist who believes that all phenomena are ultimately grounded in the laws of physics, especially for a linguist who believes that linguists' formulations should be based, however indirectly, on the intuitions and practices of native speakers, an interesting first step in accounting for sentences like (7), (11), and (13) would be to find out how native speakers of English feel about such sentences.

In context, such sentences apparently arose no notice at all. But few things of scientific interest have ever been discovered in context.

The first step was to present sentences (1-24) to native speakers of English and ask them for their assessments of the sentences' acceptability.

(1) The chemist shook up the mixture. Jacobs & Rosenbaum, 1968
(2) The chemist shook the mixture up. Jacobs & Rosenbaum, 1968
(3) *The chemist shook up it. [starred in original]Jacobs & Rosenbaum, 1968

(4) The chemist shook it up. Jacobs & Rosenbaum, 1968
(5) He wanted to help out the people.
(6) He wanted to help the people out.
(7) ***He wanted to help out them.*** NPR 9/93
(8) He wanted to help them out.
(9) *The applicants filled out them. [starred in original] Broderick, 1975
(10) The applicants filled them out. Broderick, 1975
(11) ***He went in the house and put down something.*** Cops, 9/93
(12) He went in the house and put something down.
(13) ***Can you ring up this?*** campus yogurt shop, 9/23/93
(14) Can you ring this up?
(15) Dick finally decided on the boat. Fromkin & Rodman, 1975
(16) *Dick finally decided the boat on.
(17) Dick finally decided on it.
(18) *Dick finally decided it on.
(19) *Some investigators marked down it. [starred in original] Broderick, 1975
(20) Some investigators marked it down. Broderick, 1975
(21) *The doctor cut out it. [starred in original] Broderick, 1975
(22) The doctor cut it out. Broderick, 1975
(23) He called up her. [noted as obligatory] Grinder & Elgin, 1973
(24) He called her up. Grinder & Elgin, 1973

Sources of sentences are noted. Sentences without overt sources were made up by this researcher to fill out patterns. Textbook sentences are given here in Helvetica type, made-up sentences are in Times Roman, and observed "ungrammatical" sentences are given in Helvetica Bold Italic type. Other sentences containing verb-particle strings could have been included, but considerations of subject fatigue forced me to limit what was presented.

These sentences were mixed in random order with 12 distractor sentences taken from various publications (a campus newsletter, a campus newspaper, and other publications) and presented in written form on a questionnaire that asked subjects to make acceptability judgments about the sentences. Subjects were 24 university students in the first term of introductory linguistics classes. Rating the acceptability of sentences out of context is by no means an unnatural act. Listening to conversations should be enough to convince anyone that people remark on other people's sentences all the time.

Because the subjects were making acceptability judgments for sentences presented out of context, it was suspected that priming effects would affect ratings. Half the subjects received a questionnaire containing the following instructions:

> As part of a study on how people evaluate English sentences, we need to get a better idea of what native speakers of English think is common, ordinary, natural, grammatical English. Below you will find several sentences made up of English words. Some of these sentences were taken from papers by university students, some were overheard on campus, and some were created by a special computer program designed to generate sentences from random groups of English words. Please rate each sentence on the following scale:
> 4 Completely grammatical and acceptable in any context I can imagine.
> 3 Not quite grammatical but acceptable in some contexts.

> 2 Understandable, but not really grammatical and not acceptable in many contexts.
> 1 This sentence is not English. Not acceptable in any context that I can imagine.

The other half of the subjects received the same instructions except that the first sentence read

> As part of a study on how people learn English as a foreign language, we need to get a better idea of what native speakers of English think is common, ordinary, natural, grammatical English.

And these subjects rated sentences according to the following scale:

> 4 Completely ordinary, natural, unremarkable, and "English" sounding. No native speaker of English would object to this sentence. I may even have uttered or overheard sentences just like this.
> 3 This sentence is a little "off." I would never speak a sentences like this, but I may have overheard other native speakers of English using sentences like this.
> 2 Understandable, but not really "English" sounding. A foreign speaker who knew some English might produce a sentence like this, but native speakers of English would know it was not quite right.
> 1 This sentence is not English. Native speakers might understand it, but they would know right away that it is was not produced by a native speaker of English.

It turns out that ratings for the distractor sentences (n=288)--sentences with no verb-particle combinations at all--were significantly higher than ratings (n=576) for sentences with particles. Distractor sentences like

(27) I need to know what your priorities are.
(28) It is good to see our efforts pay off.

received a mean acceptability rating of 3.62, which was significantly (p<.0001) higher than the mean rating for sentences (1-24), which was 2.91.

Manipulation of context through the differing purpose statements and rating scales given above also resulted in significantly different ratings. For the 243 ratings of sentences on the "ESL" questionnaire the mean acceptability level was 3.11, which was significantly higher (p<.0001) than the 333 ratings where subjects thought they were making grammaticality judgments (mean=2.76).

For sentences involving verb-particle combinations subjects preferred full NP's as direct objects. That is, sentences like (1) and (2) were rated significantly higher (mean=3.26) than sentences like (3) and (4) (mean=2.79). However, if we sentences traditionally regarded as "ungrammatical"--sentences like (3), (7), (9), (11), etc.--whether constructed, found, or from textbooks--there is no significant difference between sentences with full NP's and sentences with pronouns.

Similarly, sentences with the "moved" particle--sentences with the string *V - NP - Prt* (mean rating = 3.21) are preferred over sentences with the string *V - Prt -*

*NP* (mean=2.60), but here again, as we shall see, this is due to a general dislike for sentences like (3), etc.

Table 1 shows that subjects do not, in general, find sentences like (3), etc., acceptable. A Friedman nonparametric 2-way ANOVA for repeat measures shows significant differences among sentences (1-24) (chi-square=321.843, d.f.=2, p<.0001). Pairwise comparisons using the Sign Test invariably reveal that subjects prefer sentences like (4) over sentences like (3). Even attested sentences (7), (11), and (13) are rated significantly lower than sentences (8), (12), and (14), respectively.

| Sentence: | Minimum: | Maximum: | Mean: | |
|---|---|---|---|---|
| 1 | 3 | 4 | 3.87 | *shook up* |
| 2 | 3 | 4 | 3.65 | *shook up* |
| 3 | 1 | 3 | 1.91 | *shook up* |
| 4 | 2 | 4 | 3.17 | *shook up* |
| 5 | 2 | 4 | 3.25 | *help out* |
| 6 | 2 | 4 | 3.43 | *help out* |
| 7 | 1 | 4 | 2.13 | *help out* |
| 8 | 3 | 4 | 3.74 | *help out* |
| 9 | 1 | 3 | 1.78 | *filled out* |
| 10 | 2 | 4 | 3.65 | *filled out* |
| 11 | 1 | 4 | 2.78 | *put down* |
| 12 | 3 | 4 | 3.83 | *put down* |
| 13 | 2 | 4 | 2.57 | *ring up* |
| 14 | 2 | 4 | 3.61 | *ring up* |
| 15 | 2 | 4 | 3.87 | *decided on* |
| 16 | 1 | 3 | 1.48 | *decided on* |
| 17 | 1 | 4 | 3.30 | *decided on* |
| 18 | 1 | 3 | 1.57 | *decided on* |
| 19 | 1 | 3 | 1.78 | *marked down* |
| 20 | 2 | 4 | 3.52 | *marked down* |
| 21 | 1 | 4 | 1.87 | *cut out* |
| 22 | 1 | 4 | 3.26 | *cut out* |
| 23 | 1 | 3 | 2.04 | *called up* |
| 24 | 2 | 4 | 3.52 | *called up* |

Table 1. Acceptability Ratings of Sentences with Particles

The only exceptions concern sentences (15-18). The particle decide on is simply inseparable from the verb. Sentences

16. *Dick finally decided the boat on.
18. *Dick finally decided it on.

receive the lowest ratings of all.

In general, ratings for sentences with the string *V - Prt - Pronoun* parallel those for sentences with the string *V - Pronoun - Prt*. The only exception, as noted above, being for *decide on*.

Table 2 graphs the acceptability ratings of pairs of sentences like (3-4), (7-

8), (13-14) etc.

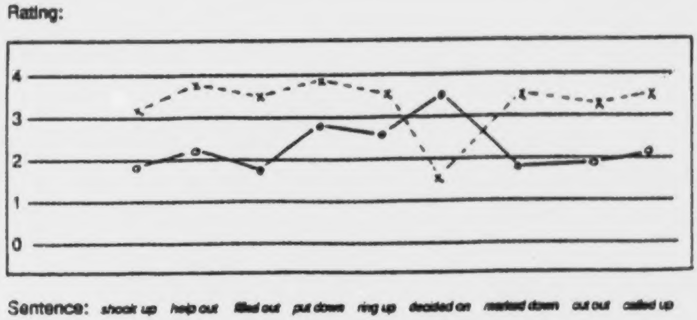


Table 2. Acceptability of Sentences with Pronouns as Objects

O = verb - particle - pronoun X = verb - pronoun - particle

If we look at only those sentences containing the string *V - Prt - Pronoun*--that is, the ungrammatical sentences--we find that some sentences are more ungrammatical than others.

As expected, sentence

(17) Dick finally decided on it.

with a mean rating of 3.30 ranks at the top. But while (17) is significantly higher in acceptability than

(11) ***He went in the house and put down something.***

the difference between the rating for (11) (mean=2.78) and that for (17) is barely significant (p=.049). And the rating for (11) is not significantly higher than that of

(13) ***Can you ring up this?***

which has a mean acceptability of 2.57. On the other hand, the gap between (13) and

(7) ***He wanted to help out them.***

with its mean rating of 2.13, is significant (p=.0225). But the difference between (7) and (23) or (23) and (3) or (3) and (21) or (21) and (19) or (19) and (9) is not significant.

In short, sentences with *V - Prt - Pronoun* strings fall into 3 groups. Sentence (17) stands alone. It is grammatical for all native speakers of English. Among the ungrammatical sentences we find 2 rank-ordered groups. Sentences (11) and (13) form a group that is considerably less ungrammatical than the others. While (7), (23), (3), (21), (19), and (9) form another group that is, on the whole, considerable less acceptable than the others.

We return once again to the question of how sentences like (7), (11), and (13) could happen. Clearly they are not favorites with native speakers of English. Yet when they occurred, they were unremarkable.

It may be that the mode of presentation matters a great deal. That is, listeners may simply be inclined to accept sentences in speech that they find ungrammatical in a written questionnaire. While hearers do make judgments as to the grammaticality or acceptability of speakers' sentences, it may be that they are more than usually critical when engaged in a task that specifically asks them to do this.

On the other hand, it may be that asking subjects to assess the grammaticality or acceptability of sentences like these simply does not tap in to their grammatical knowledge in any straightforward way. Most grammarians appear to work with some notion, implicit or explicit, of what constitutes a well-formed sentence. But this very notion may have little to do with grammaticality:

> Linguistic expressions may be "deviant" along all sorts of incommensurable dimensions, and we have no notion of "well formed sentence" . . .. Expressions have the interpretations assigned to them by the performance systems in which the language is embedded: period. (Chomsky, 1992: 27)

But if this is the case, one could well ask why we bother with rules of grammar at all. Sentences like (7), (11), and (13), along with the acceptability ratings in Table 1 and the graphs in Table 2, might lead one to "conclude that in ordinary life, as distinguished from mathematics, computer science, and generative grammar, ill-formed sentences do not occur" (Lamb, 1992: 184). Under such a system, sentences are complex lexemes, and the acceptability ratings given in Table 1 seem to indicate that native speakers of English find complex lexemes like (14) in some sense more likely, more comfortable, or less new than ones like (13).

One might go a bit further and argue that any sequence of English words is possible, though native speakers currently find ones like (16) and (18) extremely unlikely. Under such an approach, one could calculate the probability of sentences like (7) and (8) and construct probabilistic "syntactic rules" of the type in Harris (1984). But such "rules" could be formulated only after the occurrence of a given utterance. We might call such an approach to grammaticality "*post hoc* syntax," and we could distinguish it from the generative grammarians' conditions on Particle Movement in the 1960's and 1970's, which we could refer to as "*ad hoc* syntax."

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# GENDER AND NUMBER: THE PROBLEM OF "THEY"

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## 1.0 THE PROBLEM

The problem posed by the intertwining of the categories of gender and number in English is easy to describe, but considerably harder to solve. Since few linguists have attempted either description or resolution of the question over the years, the issue has gone virtually untreated. This is all the more unfortunate given that our understanding of the workings of the noun phrase is contingent upon our ability to comprehend of how gender and number work together to provide a formal definition of the notional content which they are called upon to represent linguistically.

While the category of gender is overtly marked by means of *he*, *she*, and *it* and their respective oblique forms in the third person singular personal pronouns, no such distinction is made in the third person plural. Here only a single pronoun—*they*—is found. This very elementary observation raises a number of questions, including the following: What happens to the category of gender in the plural? Does it continue to exist or does it vanish? If the category continues to exist, why are the three genders not given distinct semiological representation in the plural? If the category disappears, why would it be non-essential in the plural, yet necessary in the singular? What is the nature of the relationship between gender and number, and to what extent do the two categories influence each other? If *they* is plural, as most people would argue, what kind of plural is it? After all, it does not bear the traditional -s of plurality.

As diverse as these questions are, they ultimately lead us to adopt one of two basic hypotheses capable of accounting for the absence of gender semiology in the third person plural pronouns: either the category of gender is not present in the plural or it is present, but, for some reason, is not overtly marked. This paper constitutes a preliminary exploration of these hypotheses and an assessment of their plausibility.

## 2.0 EXPLORING THE HYPOTHESES

Before adopting either one or the other of the two hypotheses given above, a certain amount of evidence in the gender/number case needs to be sifted through. The first point of order is to consider the link between gender and plurality. Here, it is important to point out that the absence of gender semiology in the third person plural is not attributable to the disappearance over time of pronominal gender markings. Even in Old English the various personal pronouns used for the third person plural did not come in consistently distinct masculine, feminine and neuter forms. Plural pronouns certainly varied in form, but not along gender lines.

The reduction or absence of gender semiology in the plural is not limited to English. Some languages, including German, Hausa and Krongo (Corbett 202), make gender distinctions in the third person singular pronouns, but not in the third person plural. A number of other languages have multiple gender categories in the singular, but only two or three in the plural (Corbett 202). This evidence suggests that there might be a fundamental incompatibility between overt gender markings and plurality in a number of languages, and leads one to wonder why this is so. However, Corbett's findings in no way prove that the category of gender vanishes in the plural, even if it is not given semiological representation. In fact, other evidence can be cited to show the unlikelihood of a partially absent grammatical category. Before this subject can be broached, however, it is necessary to take a brief look at the role of both gender and number in English, in an effort to understand the relationship that links the two categories

### 2.1 THE GRAMMATICAL ROLE OF PRONOMINAL GENDER IN ENGLISH

Extensive research into gender in the third person singular English personal pronouns (Morris 1991) has revealed that the category serves to give linguistic represention to the way in which the speaker has thought or mentally structured a set of impressions about which he wishes to speak. In order to talk about our impressions, we must first construct a mental image of them and then convert this image into a linguistic form. Gender is a formal linguistic category that indicates the nature of some of the mental work carried out during the transformation of raw impressions to a linguistic message. In other words, gender is a trace or sign of the type of definition given to the notional content of the speaker's message.

When the impressions about which we wish to speak are defined in the simplest possible terms through straight opposition to all other impressions of a different nature, the neuter or inanimate pronoun *it* is used to represent the mental activity carried out. In other instances, however, simply drawing a line between what it is we want to talk about and everything else is not sufficient. Sometimes the impressions we wish to describe are part of a privileged relationship with other impressions which are at once of a similar nature and yet somehow opposable. In fact, the hold exerted by these relationships is so strong that in certain cases it can be extremely difficult to think or define certain sets of impressions without evoking the alternative sets of impressions with which they can be opposed. For instance, it is difficult to arrive at a complete and satisfactory definition of the concept 'girl' without evoking the concept 'boy'. In contrast, the mental work normally associated with mentally defining the concept 'table' in order to be able to say something about table-like impressions does not usually include contrasting impressions of one nature to impressions of a similar and yet diametrically opposed nature. This is not to say that such an opposition can never be established, but simply that the nature of table impressions is not very conducive to the creation of such oppositions. When the mental definition we construct of our impressions requires us to go beyond merely distinguishing them from all others, and obliges us to contrast them with others of a similar, yet opposite nature, an animate pronoun—either *he* or *she* depending on the outcome of the act of comparison—is the result.

It can thus be argued that inanimate gender evokes a mental definition of impressions which is inherently singular and uniform (i.e. a parcel of space simply set off from all other surrounding space). In contrast, animate gender evokes a mental definition which is founded on a fundamental duality or opposition (i.e. a parcel of space which is not only set off from all space of a different nature, but opposed to another space of a comparable nature).

### 2.2 THE ROLE OF THE GRAMMATICAL CATEGORY OF NUMBER IN ENGLISH

The category of number also tells us something about spatial definition. Hirtle, in *Number and Inner Space* (1982), argues that it serves to indicate whether the space needed to define the speaker's impressions is perceived to be continuous (symbolized by the absence of an -s) or discontinuous (symbolized by the presence of an -s). Since both *-s* and *-ø* substantives can be followed by a plural verb or take plural determiners, Hirtle postulates that there are two plurals in English: the internal plural (characterized by the absence of a substantival *-s* but the presence of a plural verb form or determiner) and the external plural (characterised by the presence of both an *-s* and a plural verb form or determiner). An example of the internal plural would be *The hunters shot three bear*, while *This is the story of the three bears* illustrates external plurality.

Of the two plurals, it is the internal variety that proves to be of particular interest to those studying the gender/number problem. Firstly, the pronoun *they*—and all of the other plural person pronouns, for that matter—bears no *-s*, yet takes a plural verb. Secondly, like many of internal plural count nouns and all of the plural personal pronouns, including *they* can readily evoke either a single referent or more than one referent. The "royal"*we* of academic papers often refers to a single author; *you* has already been institutionalized as a singular after beginning life as a plural; and singular uses of *they*, such as those found below, are readily available from both oral and written sources:

> (1) You can't stop a teacher when they want to do something.
> Salinger, *Catcher in the Rye*, 15
>
> (2) I want to marry a patient, imaginative man. Anyway, given the way I am, they'll have to be patient. (Personal)
>
> (3) I was asked to see the wife of an important benefactor of the hospital. I was asked to fit them in as quickly as possible.
> "Sunday Morning" June 26, 1994, CBC Radio
> Rerun of programme on Medicare in Canada
>
> (4) "This is, er, this is your advice then, is it?" said Arthur, leafing through them uncertainly.
> "No," said the old lady. "It's the story of my life. You see, the quality of any advice anybody has to offer has to be judged against the quality of life they actually lead."
> Adams, *Mostly Harmless*, 105

It is interesting to note that, contrary to what some linguists have claimed, "singular" *they* can be found even after the sex and identity of the referent have been established. Admittedly, this is not a frequent occurrence, but it is nonetheless possible and must therefore be taken into consideration.

### 2.3 GENDER AND NUMBER

These examples introduce an additional key piece of information: whenever *they* evokes a single referent, that referent is unfailingly animate and most frequently a human being. This observation merits further investigation as it provides certain insight into the relationship between gender and number. It has been suggested thus far that the use of animate gender is a sign that the speaker has defined the set of impressions about which he wishes to speak by comparing them to other impressions of a similar nature. The next question to be addressed concerns the possibility of a link between the type of animation represented by *he* or *she*, and the animation underlying singular *they*. In short, one could wonder if *he*, *she* and singular *they* have anything in common that would explain why they are used to evoke grammatically animate referents.

A clear connection can be found when one examines how singular *they* operates. It is most frequently found in indefinite references to human beings, usually following *someone*, *anyone* or *everyone* or in general reference to epicenes such as *friend*, *person*, *acquaintance*, etc. Such usage often masks the sex of the referent, thus making it particularly popular with teenagers seeking deliberate vagueness in their dealings with their parents. For example, although the friend in the following sentence is clearly singular in number, and therefore unmistakably of one sex or the other, the use of *they* does not allow the listener to determine whether the outing should be permitted or not: *I'm going out with a friend. They're coming by at seven to pick me up.*

The expressive effect is achieved because the pronoun *they* opens up enough referential space for more than one entity, while the referent itself occupies only a portion of the available space. This creates a situation in which there is a defined space having an occupied portion is opposed to a potentially occupiable portion. This situation has more than a little in common with that created when *he* or *she* is used. In the case of a singular animate pronoun, one set of impressions, taking up a certain mental space, is compared to another set of impressions, taking up another, similar mental space. This means that, while the impressions we are defining occupy one space, an alternative space is necessarily opened up to allow for the completion of the defining process. This leaves us with a situation in which one notional space is opposed to another, just as actually occupied space is opposed to potentially occupiable space in the case of singular *they*. Therefore, in at least one respect, *they* would seem to be linked quite closely to animate gender.

There are a few pieces of corroborating evidence which can be put forth to support the argument that the links between *they* and animate gender are more than purely coincidental. For instance, when *they* is used in a very general sense, without a clear antecedent, it evokes animate referents, usually people:

(5) They need help in Rwanda.
(6) They have a harsh climate in the North.

Even though there are many things other than people in Rwanda and in the North, and even though these things could need help or be exposed to a harsh climate, the plural pronoun does not bring to mind anything other than human beings in examples (5) and (6).

In contrast, when the demonstratives *these* and *those* are used in a very general sense, they tend to evoke grammatical inanimates. The following pairs of sentences offer an example of the contrast that exists between the demonstratives and *they*:

(7) These are the best. They are the best.
(8) These need help. They need help.
(9) Those are nice. They are nice.

While it is certainly not impossible to imagine an inanimate referent for the above uses of *they*, human beings tend to come readily to mind. In the case of *these* and *those*, on the other hand, it is hard to imagine a human referent in any of the cases. Only in a completive use, such as *These players are the best*, is it possible to evoke a human being.

This last observation is of particular interest since *these* and *those* both have an *-s*, normally a sign of the external plural. This would set up an interesting potential for contrast between *they*, linked to animate gender and internal plurality, and the plural demonstratives, linked to inanimate gender and external plurality. Much more research is needed, however, before any sound conclusions can be drawn concerning these potential associations.

The connection between *they* and the plural is not, however, limited to singular uses of the pronoun. Careful examination of plural groupings to which *they* can be applied reveals that they are subject to certain restrictions. For instance, it is not easy to group together random combinations of biologically animate and inanimate referents:

> (10) The kids, the dogs and the chairs are in the back yard. ??They are waiting for us.
> (11) Peter and his motorcycle were in the driveway. ??They were very hot.

It would be rash to claim that such groupings are impossible, but they do strike one as being odd, to say the least. The question is: Why?

A full study of plural groupings must be completed before any conclusions can be drawn, but it would seem, on the basis of some preliminary research, that a certain homogeneity or rationale is needed to bind individual referents into a plural relationship. Referents need to share some sort of common denominator or common ground. Determining how this common denominator is defined and what kind of space can be shared will require a good deal more research, but the subject holds promise for gaining a better understanding of the relationship between plurality and gender, particularly since the many-in-oneness of internal plurality would seem to have more than a little in common with the conditions necessary for animate gender to occur in the singular, conditions in which an opposition is set up between contrasting impressions of a similar nature.

## 3.0 CONCLUSIONS AND PROSPECTS

Although it is impossible to provide irrefutable proof at the present moment showing that gender exists in the third person plural personal pronoun, the evidence outlined thus far would seem to furnish the makings of a case in favour of the hypothesis holding that the category is indeed present. When *they* is reduced to a singular, an animate referent is evoked. Similarly, when all antecedents are eliminated and *they* is used in the most general manner possible, an animate interpretation results once again. This very preliminary evidence would seem to suggest, perhaps to the surprise of many, that *they* might well have a form of animate gender. Moreover, this form of animate gender would seem to be linked closely to internal plurality; *they* can evoke more than one referent without taking a final *-s*. Many questions about both gender and number remain unanswered at this point in time. For example, little is known about how either type of plural is formed and why certain plural groupings are more acceptable than others. The next step to be taken in this study will therefore be to find out more about *they* and what it can evoke. This will allow for a deeper probing of the links between animate gender and the third person plural pronoun.

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# VARIANT ORDERS OF NUCLEAR AND MARGINAL CLAUSE CONSTITUENTS IN MIXTEC OF SAN MIGUEL EL GRANDE, MEXICO

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## 0. INTRODUCTION

The nuclear constituents of the clause of San Miguel el Grande Mixtec (SMM), have the basic order of VSOSc (Scope is the direction of the verbing exemplified in English by the prepositional phrases in 1) **I gave a prize to the winner.** 2) **I went to the store.** Cf. Pike and Pike 1982). The margins of the clause normally occur following the nuclear constituents. The more frequently occurring clause margins are of time (Tm), manner (M), association (Asn), and location (Loc).

Occasionally, however, the order of the constituents changes, moving them to precede the V, thus increasing their prominence (Foley and Van Valin, Jr. 1985). In the fronted position these constituents are considered to be sentence constituents rather than clause constituents. The data are taken from twenty one discourses including narrative, procedural, behavioral and expository types having to do with the beginnings of various phenomena, the spirit world, causes and cures of various illnesses, causes of various anomalies of nature, customs, and animal and people stories. Some 1,000 sentences (exclusive of equative clauses) are included in the data. Forty six have fronted subjects (S<) which is 4.6% of the sentences which have been studied. Thirteen sentences (1.3%) have fronted objects (O<). Fifteen sentences (1.5%) have fronted scopes (Sc<). Twenty sentences (2%) have a fronted manner constituent (M<). Nineteen sentences (1.9%) have a fronted time constituent (Tm<). Two sentences (.2%) have a fronted location (Loc<). Four sentences (.4%) have a fronted association constituent (Asn<). This adds up to 119 fronted constituents or about 12% of SMM sentences that vary from the normal VSOSc order of their clause constituents.

Several examples of the basic, normal order of SMM clause nuclear constituents follow. The predicate, which is a verb phrase (VP), is first; then follows the subject, which is either a noun phrase (NP) or the clitic variant of a pronoun. Next may follow a direct object which is manifested by the same classes as is the subject. A scope may follow the object or, if no object occurs, the subject. The scope is most frequently marked by a preposition. The kind of clause constituent sequence is given preceding each example. Also the kind of each constituent is shown in parentheses that follow the appropriate morpheme gloss; those shown in brackets are embedding structures (only those that are relevant to the issue involved). The small number, following the example number, identifies the text and sentence of the data base in which the example is found.

Verb , Subject , Object, Scope (V S O Sc) Note that 'bowl' is modified by the restrictive phrase 'on the table':

(1) 16.14 ...nì chindee-de-tà chi əən cohò núu* mesá.
CMP place(V)-3FM(S)-3AML(O) stomach one bowl face table(Sc)
...he placed it (animal) under a bowl on the table.

Verb, Subject, Object, Scope,(V S O Sc) 'and' Verb, Subject, Scope (V S Sc):

(2) 18.3 Xí s*-táhàn-ña ndáha*-ñá núù təcóyèhndé-
or CS-hit.the.mark.INC/CNT(V)-3Fe(S) hand-3Fe(O) face rainbow-
ún te s*-téhyù yùán nuù ndáha*-ñá.
that.one(Sc) and CS-rot.INC/CNT(V) that.one(S) face hand-3Fe(Sc)
Or if she points to the rainbow, the rainbow will make her finger become infected.

Verb, Subject (V S) 'and' Verb, Subject, Scope (V S Sc):

(3) 2.3 Te nì ndaa nducha te nì ndaa-i xinì* yúcu
and CMP rise(V) water(S) and CMP rise(V)-3I(S) head mountain
súcún* xáàn*.
high very(Sc)
The water rose and the people climbed to the top of very high mountains.

Verb, Subject, Manner (V S M):

(4) 9.8c ...jā* * sáha-ña* súan.
that CNT do(V)-3Fe(S) thus (M)
...that she do it this way.

Now we present a limitation of possible reordering of clause constituents. In the data base, the highest number of fronted constituents before any one clause is two, but there is seldom more than one. Examples 5 and 6 each illustrate two fronted constituents--in 5 Subject (S<) and Scope [Sc<] are fronted; in 6 are the major topic of the whole discourse, as mentioned above. Williams 1993 finds that the topic versus focus function is much more relevant for Mixtec of Tezoatlán. It may be that when equative clauses are included in the data base of SMM such will be true of SMM as well. Cf. §1.1-2.

The feature of contrast is reinforced even more in a number of examples by occurring in a sentence introduced by the preposition co 'but'. In addition S< can be followed by chi whose basic meaning is 'because'; however, the clause that it precedes does not introduce the reason or cause of the S<. Here we suggest that it simply signals higher prominence of S<. The following examples of sentences made up of the sequence co + S< + chi + V occur at the nucleus/peak of the reasoning that a girl and a boy give to their parents to indicate their seriousness in wanting to marry each other. Cf. Examples 7-10:

co S< chi V S M; following jà* is V S Asn:
(7) 21.33a Co náá chi mà sáha-ná súan jà* cúsaquə
but 1F(S<) because NEG doINC(V)-1F(S) thus(M)..that..play.CNT/INC
nchááà táhan-ná jíín-i ..
definitely companion(V)-1F(S) with-3I(Asn)
But I, I will not commit adultery ...

co S< chi V S M:
(8) 21.48 ...co náá chi mà sáha-ná súan.
....but 1F(S<) because NEG do.INC(V)-1F(S) thus(M).
but I, I will not do like that.

co S< chi V S [O] (O is a clause made up of V S M Asn):
(9) 21.51 Co náá chi túu játahàn inì-ná sáha-ná
but 1F(S<) because NEG be.happy insides(V)-1F(S) doINC(V)-1F(S)
súan jíín* já sə́há chi ...
thus(M) with that feminine(Asn)[O] because ...
But I, I do not like to do that way with women, because ...

co S< chi V S M:
(10) 21.53 ...co náá chi * tú sáha-ná súan,
...but 1F(S<) because CNT NEG do(V)-1F(S) thus(M),
* áchí-i.
CNT say-3I.
but I, I will not do thus,' he says.

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Example 11 having S< + **chi** + V (a fronted subject is followed by **chi** which is in turn followed by a verb--actually, a verb phrase) is like the above examples except that it is not marked by **co**; therefore, the feature of contrast is not as great, but its prominence is. There are three clauses (a, b, c) exhibiting both contrast and likeness. The S< of c 'water' is different from the S of b 'people,' as is expected with a S<; however, S< repeats the S of a. The use of the same VP in all three clauses increases the prominence of the action, and the action of the water is given greater prominence by the fronting of the manner (M<) of the action of c. All of these features work together to give high prominence to the topic of this section of the discourse. Referent differences of the constituents are shown by different subscript numbers and their likenesses by like subscript numbers:

a) $V_1$ $S_1$ b) $V_1$ $S_2$ Sc c) $S_1$ < **chi** M< $V_1$ $S_1$:
(11) 2.3-4 a) Te nì ndaa nucha b) te nì ndaa-i xini*
a) and CMP rise($V_1$) water($S_1$) b) and CMP rise($V_1$)-3I($S_2$) head
yúcu súcún xáàn. c) Te nducha-ún chi víhí-
mountain high very(Sc). c) And water-that.one($S_1$<) because worse-
gá nì ndaa-chà.
more(M<) CMP rise($V_1$)-water($S_1$).
The water rose and the people climbed to the top of very high mountains. But the water rose even worse.

### 1.1 Fronted Subjects Co-referenced in the Normal Order (Left Dislocation)

There are thirty eight examples of S< VS. Twenty eight of these subjects are the subjects not only in their own clause, but also of at least a second following clause. Ten are subjects in just the one clause. This indicates that a co-referenced S< tends to be relevant to more than a single clause, but only a tendency. The subscript numbers indicate the same or different subject. In Example 12 the $S_1$< is co-referenced, not only in its own clause, but in the two following clauses. In Example 13 the $S_1$< is co-referenced only in its own clause. In the SMM text Øs indicates that the fronted subject is not co-referenced.

a) $S_1$< V $S_1$ b) V $S_1$ c) V $S_1$ [O] (O is a jà clause made up of $S_2$< V Ø$s_2$. Cf. §1.2):
(12) 2.9-10 a) Te máá tíjiì-ún nì quee-tà* b) * vái-
a) and just.that.one vulture that.one($S_1$<) CMP go(V)-3AML($S_1$) b) CNT come(V)

Time [Tm<] and Manner (M<) are fronted. From now on only abbreviations for constituent types will be used:

S< [Sc<] V S:  
(5) 1.11 Te **víló jí*-náhan-tà* máni nuù* quixí**  
and lizard with-group-3AML(S<) just face sleep.INC/CNT(V)  
**jàco cá-jahàn-tà...**  
wolf(S)[Sc<] PL-goINC(V)-3AML(S)  
As for the lizards, just where the wolves sleep is where they go...

[Tm<] M< V S:  
(6) 15.24 Te **nuù* ní na-jaà-de súan nì**  
and face CMP newly-arrive(V)-3FM(S)[Tm] thus(M<) CMP  
**sáha-de.**  
do(V)-3FM(S)  
When they got to a certain place, thus, he did.

Included in the examples in this paper, are both independent and dependent sentences. Some kinds of fronting tend to occur in independent sentences and others in dependent sentences. However, that difference seems not to correlate significantly with fronting differences. Independent sentences are frequently introduced by **te** 'and.' Dependent sentences are marked with prepositions, which are then followed by a normal independent structure. The more frequent prepositions which are included in examples are: **jà** 'that', **chi** 'because', **xí*** 'or', **nuù** 'face/to', **nú** 'if/when', and **co*** 'but'.

1. Fronted Subject (S<)

Subject fronting, in addition to signaling increased prominence as mentioned above, signals a change of subject (except in discourse initial position in which case it is the major topic of the whole discourse). Thus prominence and contrast are important features of S<.

There are two kinds of subject fronting: one that is co-referenced in the normal order in the following clause (left dislocation) and another that is not (topicalization). In many languages these features function as topic versus focus respectively. However, in SMM that functional distinction is very minimal in that both kinds of fronting occur as subjects in more than one clause and also as subjects in just one clause. That distinction is lessened even more in that both occur as the initial sentence in a discourse, and

tà*. c) Te nì jinì-tà* já* ndívii ndáyi nì
3AML($S_1$). c) and CMP see(V)-3AML($S_1$) that all corpse ($S_2$<) CMP
cà-jihì-Øs.
PL-die(V)-Ø$s_2$ [O]
That vulture, he went. He saw that all the bodies were dead.

a) $S_1$< V $S_1$ Sc b) $S_2$ V:

(13) 5.70-71 a) Te máá* cualyá-de * ndéhè cóhó*-ña* jáhà*
a) and just.that.one godmother-3FM($S_1$<) cry loudly(V)-3Fe ($S_1$) foot
yíi-ñá* chìhín. b) Chi cuàchi mbáà-ña*
husband-3Fe skunk(Sc). b) because fault co-father-3F($S_2$)
cúu.
beCNT/INC(V)
That godmother of his cried loudly for her husband-skunk. For it was the fault of her co-father.

### 1.2 Fronted Subject not Co-referenced in the Normal Order (Topicalization)

There are 8 examples of S< not co-referenced in the normal order (VØs). 6 of these are subjects in only the one clause, and 2 are also subjects of the next clause. Thus we see that there is a tendency for the non-co-referenced S< to have a smaller domain than the one which is co-referenced.

The S< in Example 14 (cf. the last part of Example 12) is not co-referenced in the normal order (indicated by Øs in the SMM text) and is not the subject of any other clause:

S< V Øs:

(14) 2.10b ...já* ndívii ndáyi nì cà-jihì Øs.
that all corpse(S<) CMP PL-die(V) Øs
...that all the bodies were dead.

In the Example 15, S< in a) is understood to be the subject in all three clauses a), b), and c), but is co-referenced in none of them:

a) $S_1$< O< V Ø $s_1$ b) V Ø $s_1$ c) V Ø $s_1$ O:

(15) 15.20 Te nàún * jiní máá*-de jà* a) mbáà-de-
and what CNT have.knowledge just.that.one-3FM that.one a) co-father-3FM-
ún chi máni yuchi * ndíso-Øs b) jà*
that.one($S_1$<) because only flour(O<) CNT carry(V)-Ø$s_1$ b) that
xícó*-Øs c) nì x-ndáhú-Øs-de jà* yáà * cúu.
sellCNT/INC(V)-Ø$s_1$ c) CMP CS-pitiful(V)-Ø$s_1$-3FM(O) that ash($S_2$) CNT
be(V)

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And how could that one know that his co-father was carrying only flour to sell and that he had deceived him by saying it was ashes.

## 2. Fronted Object

There are 13 examples of fronted objects (O<). In each case the fronting gives prominence to the object.

O< V S:
(16) 2.13d ...já* máni cũñu ñãyəvə* yée tíjiī-ún...
that only meat people(O<) eatCNT/INC(V) vulture-that.one(S)
...that it was only the flesh of the dead people that the vulture was eating...

O< V S:
(17) 16.5b ...ja* ñáyəvə* ndáhú úni ndáhú xaãn* ní sáha-yã*.
that people poor only poor very(O<) CMP do(V)-god(S)
...poor people, absolutely poverty stricken, did God make.

O< V S:
(18) 16.6 Te ñãyəvə* rícú, uni ricú xaãn* ní sáha-yã*
and people rich only rich very(O<) CMP do(V)-god(S)
* áchí-ña*.
CNT say-3Fe
'And rich people, only very rich people, did God make,' she said.

## 3. Fronted Scope

In this paper the basic meaning of scope in English is the direction of the verbing such as the bold faced part of 'He handed the tools to me' and 'The lava erupted from the volcano' Also it is an obligatory (or nearly so) argument (that isn't an actor or undergoer) for any given verb such as in 'He resided in Los Angeles.' and 'The play lasted two hours.' In SMM the meaning of scope is essentially the same.

The fronting of scope from its normal position gives it increased prominence. Cf. §4 for the contrast between scope and location. We have 15 examples of Sc<, but give only three here:

Sc< V [S] (the jà clause modifying the noun is V Øs O):
(19) 12.3 ...nú yani xí* jícá ncháa´ ñacuīhná jà* ní
if near or far(Sc<) resideINC/CNT(V) thief that CMP
quihin-Øs-tà*, * áchí-øs.
take(V)-$Øs_1$-ANL(O)[S] CNT say(V)-$Øs_2$
...whether near or far where the thief, who took the animal, is,' he says.

Sc< V S:

(20) 21.70b ...te nuù* mesá-ún * cánchaā̃ santú...
...and face table-that.one(Sc<) CNT PL-reside(V) saint(S)...
...and on that table is where the saint is...

Sc< V S 'and' Sc< V S Asn:

(21) 21.71 Te yúan * júngāva əən yuu jáá te yúan
and over.there(Sc<) CNT lie.down(V) one mat new(S) and there(Sc<)
* cá-nungōo-i jíín* mádriná-i...
CNT PL-sit.down(V)-3I(S) with godmother-3I(Asn)
And over there a new mat was lying (on the floor) and there they sat down with their godmother...

### 4. Fronted Location

A location constituent contrasts with a scope constituent primarily in that location is usually the theater of the verbing rather than the direction of the verbing and is a margin of the clause rather than a clause nuclear constituent. In our data we have only two fronted locations, and, as is to be expected, their prominence is heightened. In Example 22 location is followed by te 'and', which doesn't have the same function that te has in other contexts, but rather it is comparable to the function of chi 'because' in Examples 7-11 which seems to increase the prominence of the constituent which it follows. Such a function is especially relevant in that Example 22 introduces a pivotal segment of the discourse, but Example 23, which has no te, does not. This last example does highlight location in that it has not only a fronted one, but also a second one in the normal order.

[Loc<] (NP in which a noun is modified by a nuù clause) te V S Asn:

(22) 15.17 Te əən vehe nuū* ní jaā-de te nī cachī
and one house face CMP go(V)-3I(S)[Loc<] and CMP say(V)
chāa-ún jíín*-de:
man-that.one(S) with-3M(Asn)
And at one house where he went, that man spoke to him, '...

Loc< V S Loc with two location constituents:

(23) 21.70d ...te yúan * cayú yitə nù* santú-ún.
and over.there(Loc<) CNT burn(V) candle(S) face saint-that one(Loc)
And over there the candle is burning before that saint.

### 5. Fronted Manner

A fronted manner constituent has two different sources 1) from the verb phrase margin as manner and 2) from the clause margin as manner. We illustrate their normal, unmarked order in Examples 24 and 25 respectively.

There are fewer clausal adverbs than there are verbal adverbs, some of which aré **xaàn** 'very', **ñáá** 'foolish', **vàha** 'good', **-gá** 'more' and **ñahàn** 'early'. The most typical clausal adverb is **súan** 'thus' which is a pro-form that refers usually to a kind of action that has happened earlier (Example 24), but occasionally refers to action to come. These two classes are never both fronted in the same clause; they seem to carry the same heightened prominence and the same function in the fronted position; therefore,we judge them to occur in the same fronted position. However, **súan** does occur more frequently in the fronted position than it does in the clausal position. Cf. Examples 26-29.

V (**xáàn** is the verbal adverb in the margin of the VP) S:

(24) 5.38 Te * cá-cusəà* xáàn*-tú inì-de.
and CNT PL-be.happy very-again insides(V)-3M(S)
and they were very happy again.

V S M (**súan** is the clausal adverb, follwing the S and is in the clause margin as manner, referring to actions done earlier):

(25) 9.8 ...jā* sáha-ña* súan.
...that doINC/CNT(V)-3Fe(S) thus(M)
...that she does like this.

M< V S (a verbal adverb phrase is the fronted constituent):

(26) 15.11c ...chi xaàn* váha * cá-jaan-i,...
because very good(M<) CNT PL-buy(V)-3I(S)
...because very well they buy,...

M< V S (a verbal adverb phrase is the fronted constituent):

(27) 21.49 Chi sáən sáən cándàa inì sava ñàyəvə.
because different different(M<) be.likeINC/CNT insides(V) half people(S)
People are really very different

M< V S (a clausal adverb is the fronted constituent):

(28) 15.7 Te súan nì quihin vàha ña-sáhá-de
and thus(M<) CMP take good(V) woman-female-3M(S)
This way his wife saved them very well.

M< V S Asn (a clausal adverb is the fronted constituent):

(29) 5.45b jā* súcan nì cahàn mbáà-de jíín*-de.
that thus(M<) CMP speak(V) co-father-3M(S) with-3M(Asn)
…this way his co-father spoke to him.

## 6. Fronted Association

The association constituent is a phrase marked with the preposition jíín 'with'. Examples 30-32 illustrate a normal order for a jíín-phrase. Note that in Example 30 the jíín-phrase occurs immediately following the subject, but not in Example 31, hence jíín cannot be considered to be a co-ordinator of noun phrases. There is no good candidate in SMM for that function. Another frequent use of a jíín-phrase, as seen in Example 32, within the restrictive clause modifying 'woman', marks an addressee. Note also in 32 that the jíín-phrase, which functions as association, contrasts with the embedding núú-phrase which functions as scope, indicating the direction of the woman's going.

V S Asn Asn

He, the (S), is accompanied by his wife(Asn) and son(Asn):

(30) 21.23 …te vàl-de jíín* ñá-sə́hə́-de jíín* séhe
…and comeINC(V)-3M(S) with woman-female-3M(Asn) with offspring
yíí-de.
male-3M(Asn)
He comes with his wife and his son.

V S Tm Asn Asn [Asn] Note that in the third Asn, the noun is modified by a restrictive clause within which there is an Asn constitutent:

(31) …te nī chaā tucu-de nuū* uná quəvā* jíín* séhe
…and CMP come again(V)-3M(S) face eight..day(Tm) with offspring
yíí-de jíín* ñá-sə́hə́-de jíín* yacú ndasa * cuní
male-3M(Asn) with woman-female-3M(Asn) with some how CNT ?
manī*-dé jíín* cháa yúan.
love(V)-3M(S) with man that.one(Asn)[Asn]
…and he came back after eight days with his son and his wife and with some food depending on how well he likes the other man.

The first two VPs, in the following example, with their subjects form a characteristic close-knit group in SMM, followed by its Sc, within which is an NP with a noun modified by a restrictive clause which includes the Asn constituent which is in a normal order. Note the contrast of Sc and the included Asn constituent:

V S V S [Sc]

(32) 10.4 Te * quée*-ña* * jáhān-ña* núù ñáhan ní
and CNT leave(V)-3Fe(S) CNT go(V)-3Fe(S) face woman CMP
cahàn jíín* súchí lúlí-ún.
speak(V) with child small-that.one(Asn)[Sc]
And she leaves going to the woman who had spoken to her little child.

The data include three examples of fronted association constituents, which heightens their prominence. In Example 33 the entire jíín-phrase is fronted, but in Examples 34 and 35 only the object of the phrase is fronted. The significance of this difference is yet to be studied.

Asn< V S

The whole jíín-phrase is fronted in the second clause (following the second te):

(33) 1.4b Te nì təvà músicà cuahà te jíín* ndícàndii vài
and CMP play(V) music much(S) and with sun(Asn<) comeINC(V)
músicà-ún te níhní xáàn* sáha.
music-that.one(S) and hot very(M<) do(0s)
A great deal of music was played and, with the sun, came that music, and it was very hot.

Only the object of jíín is fronted:

(34) 16.1 ...te máni nducū * jíca-de jíín*...
...and just firewood(Asn<) CNT walk(V) 3M(S) with(Asn)
...and just with firewood he makes his living...

Only the object of jíín is fronted:

(35) 15.3b ...Máni yaā-ni jáhān-ná jíín*...
...just ash-just(Asn<) go(V)-1F with(Asn)
Just with ashes, I go....

## 7. Summary

San Miguel el Grande Mixtec (SMM) has the normal order of nuclear clause constituents of VSOSc optionally followed by one or two of the margins with the function of location, time, manner and association. About 12% of SMM clause constituents are fronted in more than 1,000 clauses (exclusive of equative clauses) in the data base of twenty one discourses of different genres and many different topics. The fronting of any clause constituent involves the heightening of prominence of that constituent.

The fronting of the subject includes not only increased prominence, but also a feature of contrast: 1) it always signals a change of subject; 2) at nuclei of dialog, it can be introduced by the contrast preposition co 'but'; 3) it is sometimes followed by the preposition chi 'because', but in this instance doesn't signal reason or cause, but additional prominence/contrast. A fronted subject co-referenced in the normal position is, on occasion, a subject also in a following clause, but not always. A fronted subject not co-referenced in the normal position, usually is understood to be the subject of the one clause, but occasionally it is understood to be the subject of a following clause or two.

The association phrase also has two forms of fronting. It is much like English: 'With Tom, I have never played basketball' versus 'Tom, I have never played basketball with'.

As more examples of fronting are found, more generalizations may become apparent.

Abbreviations:

* = word that changes tone of a following word if it can be changed
- = precedes an enclitic allomorph or follows a prefix
1, 2, 3= first, second, third persons
´ = high tone
AML= animal
Asn= association
< = fronted constituent
CMP= completed aspect
CNT= continuing aspect
CS= causative
Fe= female
FM= formal, male
F= formal
INC/CNT= ambiguity as to those aspects
INC= incompleted aspect
Loc= location
M= manner
Øs= zero subject
O= object
PL= plural
Q= Question
SMM= San Miguel el Grande Mixtec
S= subject
Tm= time
VP= verb phrase
V= verb
` = low tone
• = continuing aspect morpheme
[ ] = embedding structure relevant to the issue

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# SHIFT IN THE AUXILIARY SELECTION IN BRETON*

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1. INTRODUCTION. The Unaccusative Hypothesis developed by Perlmutter (1978) sparked a renewed interest in the study of auxiliary selection. Providing evidence from Italian, Perlmutter argues that intransitive verbs split into two categories, unergative and unaccusative. Unergative verbs refer to verbs having an initial subject but no initial object and take the auxiliary to have. Unaccusative verbs refer to verbs having an initial object but no initial subject and take the auxiliary to be. However, languages may differ as to which verbs belong in each class. Even in Italian, verbs classified under unaccusatives may take the auxiliary to have if the activity aspect is emphasized rather than the accomplishment (Rosen 1984).

The purpose of this work is to account for the auxiliary selection and the shift observed in the auxiliary selection in Breton, a Celtic language closely related to Cornish and Welsh.[1] I argue that the Unaccusative Hypothesis corresponds to Breton classification of verbs into strong and weak. Strong verbs correspond to unergatives and take the auxiliary endout 'to have'. Weak verbs correspond to unaccusatives and take the auxiliary bout 'to be'. However, with the class of weak verbs more distinctions are being made according to the semantics of nominals, whether they are definite or indefinite, and whether they are or are not marked for control. The shift in the auxiliary selection relates to the notion of control associated with the auxiliary endout 'to have' and ergativity in the language.

## THE UNACCUSATIVE HYPOTHESIS IN BRETON

2.1. STRONG VERSUS WEAK VERBS. In traditional grammars, Breton verbs are classified according to whether they are active or strong or whether they are neuter or weak. Strong verbs refer to transitive, ditransitive verbs, and intransitive verbs having an indirect complement and take the auxiliary endout in complex tenses, as seen in (1)-(3).[2]

(1). Me zad e houlenn / EN-DES goulennet er pred.
my father PRT-order.PRS / 3SM-be.PRS ordered the meal
'My father orders/has ordered the meal.'

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*This research is supported by a doctoral fellowship awarded by the Social Sciences and Humanities Research Council of Canada.

[1] The data discussed below is drawn from the Gwenedeg (vannetais) dialect having its own spelling system adopted here. When the data come from another dialect (Kerneveg, Leoneg, or Tregerieg) or appear in another spelling system, transcription into the Gwenedeg spelling system has been carried out automatically for the purpose of consistency.

[2] The abbreviations used in this paper are: DEM 'demonstrative suffix'; EXT 'existential'; F 'feminine gender'; FUT 'future tense'; INF 'infinitive verb'; IPF 'imperfect tense'; M 'masculine gender', P 'plural'; PRS 'present tense'; PRT 'sentence particle'; PST 'past tense'; REFL 'reflexive particle'; S 'singular'; 1 'first person'; 3 'third person'.

| | | | | | |
|---|---|---|---|---|---|
| (2). | Me zad | e zispleg / | EN-DES | displeget | d' en Intron Fur |
| | my father | PRT-tell.PRS / | 3SM-be.PRS | told | to the Lady F. |

'My father tells/has told Mrs Fur of some of his trips.'

| | | |
|---|---|---|
| lod | ag é | veajeu. |
| some | of his | trips |

| | | | | | |
|---|---|---|---|---|---|
| (3). | Visant | e sell / | EN DES | sellet | doh er bed. |
| | V. | PRT-watch.PRS/ | 3SM-be.PRS | watched | from the world |

'Visant watches/has watched the world.'

Weak verbs refer to plain intransitive verbs and take the auxiliary bout 'to be', as in (4).[3]

| | | | | | | |
|---|---|---|---|---|---|---|
| (4). | Mem | breuder | e zas / | E ZO | deit | déh. |
| | My | brothers | PRT-come.PST / | PRT-be.PRS | come | yesterday |

'My brothers came/have come yesterday.'

The class of weak verbs comprise verbs of motion like mond 'to go', dont 'to come', rédeg 'to run', lammat 'to jump', nijal 'to fly', pignein 'to climb', diskenn 'to go down', kerhed 'to walk', bale 'to walk', pourmen 'to walk', sevel 'to rise', etc...; or verbs of experience like mervel 'to die', genel 'to be born', koéhed 'to fall', degoéhed 'to happen', kresked 'to grow', etc... . They correspond to Italian unaccusative verbs occurring with the auxiliary essere 'to be' in compound tenses (Rosen 1984: 44-45). I therefore assume that the distinction unergative/ unaccusative holds in Breton with the unergative verbs taking the auxiliary endout 'to have' and the unaccusative verbs taking the auxiliary bout 'to be'.

2.2. PAST PARTICIPIAL ABSOLUTES. The Unaccusative Hypothesis is further supported by the way past participial absolutes behave in Breton. Rosen (1984:48) shows that past participial absolutes from initially unaccusative verbs taking the auxiliary essere 'to be' are well formed, whereas past participial absolutes from initially unergative verbs taking the auxiliary avere 'to have' are not. In Breton we find similar effects in discourse related contexts. The discourse particle CHETU, equivalent to French 'voici' or 'voila', can introduce past participial absolutes, as examplified in (5).

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| (5). | Chetu | me | lon | astennet | heb | fichal | ar en | aoter | bras. |
| | here | my | animal | lied | without | move.INF | on the | altar | great |

'Here is my beast lying without moving on the great altar.'

(Jaffré 1986: 10)

However, past participial absolutes of strong verbs are not possible in Breton, as seen in (6).

| | | | | | |
|---|---|---|---|---|---|
| (6) a. | *Chetu | Bechej | dastumet | pep | blei. |
| | here | Bechej | gathered | each | wolf |

'Here is Bechej having gathered each wolf.' (op. cit. p 30)

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[3] The auxiliary bout 'to be' displays five forms in the present tense which vary according to the position and definiteness of nominals and according to dialectal variations. These forms will not be discussed here with the exception of the existential predicate éh es 'there is'.

BEST COPY AVAILABLE

b.*Chetu éañ kollet é benn ér pelldon ag er hoed.
here 3SM lost his head in.the depth of the wood
'Here is he having lost his head in the midst of the wood.'
(op. cit. p 32)

c.*Chetu éañ péhet / pellgomzet / goaedet.
here 3SM sinned/ telephoned / bled
'Here is he having sinned, telephoned, bled.'

In contrast, past participial absolutes of weak verbs are perfectly acceptable in Breton, as shown in (7).

(7) a. Chetu kousket er jibouésour endro.
here slep the hunter again
'Here is the hunter sleeping again.' (op. cit. p 32)

b. Chetu Oann oeit d' En Ignel...
here Oann gone to Inguiniel
'Here is Oann gone to Inguiniel.' (op. cit. p 38)

c. Chetu me degoéhet geti,...
here 1S arrived with.3SF
'Here am I having reached it.' (op. cit.)

2.4. THE DEFINITENESS EFFECT. Strong verbs selecting endout 'to have' are insensitive to the definiteness of nominals. This is observed in question/ answer sequences. Breton does not allow a yes or no answer. A possible answer can comprise the main verb in the infinitive followed by the auxiliary gober 'to do', verb root gra, lenited form hra, marked for person and number of the preceding subject, as in (8) and (9).

(8) a. Sentein e hra er vugalé doh o zud?
obey.INF PRT-do.PRS the children from their parents
'Do the children obey their parents? They do.'

Sentein e hraNT.
obey.INF PRT-do.PRS.3P

b. Sentein e hra bugalé doh o zud?
obey.INF PRT-do.PRS children from their parents
'Do children obey their parents? They do.'

Sentein e hraNT.
obey.INF PRT-do.PRS-3P

(9) a. Selled e hra er baotred doh er bed?
watch.INF PRT-do.PRS the boys from the world
'Do the boys watch the world? They do.'

Selled e hraNT.
watch.INF PRT-do.PRS.3P

b. Selled e hra paotred doh er bed?
watch.INF PRT-do.PRS boys from the world
'Do boys watch the world? They do.'

Selled e hraNT.
watch.INF PRT-do.PRS.3P

In both (8) and (9), gober is marked -nt for 3rd person plural, whether the preceding subject is definite, as in the a- sentences, or indefinite, as in the b-sentences. In contrast, weak verbs selecting bout 'to be' are sensitive to the definiteness of the nominals, as illustrated in (10) and (11).

(10) a. Dont e hra en dud? Dont e hraNT.
come.INF PRT-do.PRS the people come.INF PRT-do.PRS.3P
'Do the people come? They do.'

b. Dont e hra tud? Dont e hra.
come.INF PRT-do.PRS people come.INF PRT-do.PRS.3S
'Do people come? Some come .'

(11) a. Koéhed e hra er blahed yaouank?Koéhed e hraNT.
fall.INF PRT-do.PRS the girls young fall.INF PRT-do.PRS.3P
'Do the young girls fall? They do.'

b. Koéhed e hra plahed yaouank? Koéhed e hra.
fall.INF PRT-do.PRS girls young fall.INF PRT-do.PRS.3S
'Do young girls fall? Some do.'

In the b- sentences, gober remains unmarked for the person and number of the preceding subject, hra for 3rd person singular. Only the existential interpretation is available here.

To sum up, auxiliary selection, past participial absolutes and definiteness effect support the Unaccusative Hypothesis in Breton.

2.3. PROBLEM. Nevertheless, weak verbs create a potential problem for this classification. Under certain circumstances, they may take the existential predicate éh es 'there is', as in (12)a., the auxiliary bout, as in (12)b., or the auxiliary endout, as in (12)c..

(12) a. Koéhet éh es ur/*er plah yaouank.
fallen PRT-be.PRS.EXT a/the girl young
'A young girl fell.'

b. Koéhet é er/*ur plah yaouank én é gichen.
fallen be-PRS the/a girl young on his side
'The young girl fell on his side.'

c. Koéhet hé-des er/*ur plah yaouank én ur zont.
fallen 3SF-be.PRS the/a girl young in a come.INF
'The young girl fell while coming.'

In (12)a., the existential predicate éh es 'there is' can only occur with indefinite nominals whereas, in (12)b., the auxiliary bout can only occur with definite nominals. In (12)c., the auxiliary endout can only occur with definite nominals. Thus we can give a first approximation of the auxiliary selection in Gwenedeg, as in (13).

(13). AUXILIARY SELECTION

| VERBS | AUXILIARY | SEMANTICS |
|---|---|---|
| STRONG | endout 'to have' | |
| WEAK | endout 'to have'<br>bout 'to be'<br>éh es 'there is' | + definite<br>+ definite<br>- definite |

However, in (12)c., the auxiliary endout being sensitive to the definiteness of nominals seems to contradict our earlier claim that this auxiliary is insensitive to the definiteness of nominals when associated with strong verbs. As I shall demonstrate, the use of the auxiliary endout with the class of weak verbs is crucial for determining how auxiliary selection is effected in the language.

## AUXILIARY SELECTION

3. The auxiliary selection appears to be semantically determined according to whether the nominals are definite or indefinite and whether they are or are not marked for control (eg., internal locus of control). The notion of control, associated with the auxiliary endout 'to have' and ergativity in the language, is crucial in understanding how the shift in the auxiliary selection is effected in Breton.

3.1. CONTROL. How can we account for the fact that the auxiliary endout is sensitive to the definiteness effect when associated with weak verbs, as in (12), but insensitive to it when associated with strong verbs, as in (8) and (9)? In other words, what is the difference between bout and endout when associated with weak verbs? Some further illustrations follow in (14) and (15).

(14) a.

| | | |
|---|---|---|
| Kousket | e oén | neuzé. |
| slept | PRT-be.PST.1S | then |

'I was sleeping then.'

b.

| | | | | |
|---|---|---|---|---|
| Kousket | em - es | mat | e-pad | en noz. |
| slept | 1S-be.PRS | good | during | the night |

'I slept well during the night.'

(15) c.

| | |
|---|---|
| Marvet | int. |
| died | be.PRS.3P |

'They died.'

d.

| | | | | |
|---|---|---|---|---|
| Marvet | en - des | el/*ul | leue | bihan. |
| died | 3SM-be.PRS | the/a | calf | small |

'The little calf died.' (Kervella 1976:154)

To say that there are two verbs koéhed 'to fall', as in (12), kousked 'to sleep', as in (14), and mervel 'to die', as in (15), one unaccusative and one unergative, is not very insightful. The only difference between (12)b. and c. and between the a-

and b- sentences in (14) and (15) is a semantic difference. Whereas the auxiliary bout indicates that the subject is a patient having no control over the event, the auxiliary endout indicates that the subject takes part in the event in one way or another. In (12)c., the falling is controlled by something the subject is ready to tell about. In (14)b., the sleeping gives some satisfaction to the subject. In (15)b., the death of the little calf is not passive. Whatever the semantics of these sentences, it is clear that the presence of the auxiliary endout implies some control over the event. This is further illustrated in (16).

(16) a. Trotet hé - devoé er /*ur gazeg penn - da - benn en hent.
trotted 3SF-be.PST the/*a mare head-to-head the way
'The mare trotted all the way.'

b. Nijet en - des el/*ul labous eid er gweh ketan.
flown 3SM-be.PRS the/*a bird for the time first
'The bird took its first flight.'

Here as well, the auxiliary endout occurs and the nominal adjacent to the verb must be definite. In (16)a., the mare did behave well, keeping the same pace all the way, and, in (16)b., the bird succeeded in flying from the nest. Thus here as well, endout is associated with control. We can now formalize the auxiliary selection as (17).

(17) AUXILIARY SELECTION

| VERBS | AUXILIARY | SEMANTICS |
|---|---|---|
| STRONG | endout 'to have' | + control |
| WEAK | endout 'to have'<br>bout 'to be'<br>éh es 'there is' | + definite + control<br>+ definite - control<br>- definite - control |

The term 'control' is not meant as a syntactic entity of the kind familiar to the Government and Binding framework. It is rather to be taken as a semantic notion relating to the psychological notion of internal/external locus of control, a fundamental and universal behaviour found in certain species including humans (Klaiman 1991:117). 'Control' therefore is a conscious behaviour which allows an animate being to minimize the potential negative outcomes in the face of adversity and to maximize the potential positive outcomes when the occasion comes. Moreover, according to Klaiman (op. cit.) 'there seems no reason in principle to discount the possibility that attribution of control may be reflected in the mental structures which underlie grammatical behaviour'. As seen for Breton, the attribution of control is expressed through the auxiliary selection, bout being marked [- control] and endout being marked [+ control].[4]

3.2. ERGATIVITY. According to Klaiman (op. cit. p 128), unaccusativity represents a covert type of active-stative patterning. This is well illustrated in Breton by the dichotomy endout/bout. Furthermore, the active-stative type has been treated as a special kind of the ergative type (op. cit. p 129). Anderson (1992:357) notes that, in many languages, the expression of possession is by means of a periphrastic construction of the 'at me is a book' type found in Russian and elsewhere. When the structure serves as the basis for the creation of a perfect tense, as in Breton, we should expect something like 'at me is the problem solved' to express 'I have solved the problem'. The properties of this structure are those of an ergative construction.[5] Let us illustrate this. In modern Breton, we find two ways of expressing possession, as in (18).

---

[4] For more details on control, see Klaiman (1990, 1991) and Schapansky (1992b, in preparation).

(18) a. Er levr 'zo genein.
the book (PRT)-be.PRS with.1S
'The book is with me/ I have the book (with me).'

b. Er levr em - es.
the book 1S-be.PRS
'The book me-is/I have (own) the book.'

In (18)a., we have the so-called locative construction. The subject levr 'book' is associated with the possessed entity while the indirect object genein 'with me' is associated with the possessor. The relation possessor/possessed entity is not established since the sentence means I may or may not own the book I have with me. This contrasts with (18)b. where levr, the possessed entity, is interpreted as the object while genein, the possessor realized here as the object proclitic em for 1st person singular, is interpreted as the subject. This sentence can only mean I possess the book. The shift between (18)a. and b. is schematized in (19).

(19).

| LEVR | GENEIN |
|---|---|
| [possessed] | [possessor] |
| [- control] | [+ control] |
| subject | object |
| \| | \| |
| object | subject |

Since the possessor is associated with control then it is reinterpreted as subject. This new possessive verb served as the basis for the creation of the auxiliary endout 'to have' and was subsequently applied to all verbs considered as active or strong, as seen in (20).[6]

(20) a. Er heveleg 'zo tapet dehoñ.
the bittern PRT-be.PRS caught to.3SM
'He caught the bittern.'

b. Er heveleg en - des tapet.
the bittern 3SM-be.PRS caught
'He has caught the bittern.'

Sentence (20)a. is in the stative voice. The subject is er heveleg 'the bittern' while the agent is realized as an indirect complement dehoñ 'to him'. Sentence (20)b. is in the active voice. Er heveleg has been reinterpreted as the object while the agent, realized as the object proclitic en- for 3rd person masculine singular, has been reinterpreted as the subject through control associated with the auxiliary endout.[7] This is schematized in (21).

---

[5] See Anderson (1992) for more details.

[6] For more details on the evolution of the voice system in Breton, see Schapansky in preparation.

(21).

| KEVELEG | DEHOÑ |
|---|---|
| theme | agent |
| [- control] | [+ control] |
| subject | object |
| \| | \| |
| object | subject[8] |

The b- sentences in (18) and (20) are the so-called ergative constructions. The subject appears on the verb as an object proclitic. This contrasts with subject clitics in accusative constructions which are suffixed to verbs, as in (8) and (9).

3.3. SHIFT IN THE AUXILIARY SELECTION. As attested at earlier stages of the language, bout was the only auxiliary selected by the class of weak verbs involving definite nominals, and by reflexive verbs. Hingant (1868) for Tregerieg and Le Bayon (1878) for Gwenedeg makes no mention of endout being used with weak verbs such as mond 'to go' and dont 'to come'.[9] Guillevic and Le Goff (1902) for Gwenedeg note that endout is now being used where bout was current at an earlier time.

The shift in the auxiliary selection is even more remarkable with a class of verbs not discussed yet, reflexives considered as passives in Relational Grammar. Reflexive verbs typically occur with the reflexive particle UM prefixed to the verb, as shown in (22).

(22) a.

| | | | |
|---|---|---|---|
| Hi | um | gavé | goann. |
| 3SF | REFL | find.IPF | weak. |

'She found herself weak.' (Herrieu 1979:57)

b.

| | | | | |
|---|---|---|---|---|
| Ind | um | laho | ged | an oto - sé. |
| 3P | REFL | kill.FUT | with | the car-DEM |

'They will kill themselves with that car.' (op. cit.)

The only auxiliary used in compound tenses is the auxiliary endout, as shown in (23).

(23).

| | | | |
|---|---|---|---|
| Ind | o - des | um | lahet. |
| 3P | 3P-be.PRS | REFL | killed. |

'They have killed themselves.' (op. cit.)

However, this was not always the case. Guillevic and Le Goff (1902:50) give the option of bout or endout, bout being still used in certain geographical regions of the Gwenedeg speaking area, whereas endout is used in others. Moreover, they note that the auxiliary bout was the auxiliary used with reflexives at an earlier time and was still used at the time in the dialect of Leoneg. For Tregerieg, Hingant (1868:170) gives only bout as the auxiliary with reflexives. Le Bayon (1878:51) for Gwenedeg does not mention the auxiliary used with this class of verbs. However, since he mentions all the major differences between French and Gwenedeg, I assume that this lack of precision in the auxiliary selection is favoring bout since endout would represent a major departure from French that could not be overlooked in such a book. For Tregerieg Le Clerc (1908:90) gives only endout as the reflexive auxiliary. Kervella (1976) mentions that reflexive verbs take the auxiliary bout like weak verbs. They can also take the auxiliary endout. How the auxiliary selection is effected with reflexive verbs is not discussed nor to which dialects it applies, Kerneveg or Leoneg. Furthermore, Kervella (1976) gives endout as the current auxiliary occurring with all verbs of motion, but lists all the environments in which endout is not allowed. How can we explain the shift in the auxiliary selection in Breton?

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[7] Endout, a reduced form of en devout comes from Old Breton do-but 'to be present'. The form endout comes from the third person masculine singular and literally means 'be-present-at-him'. The other forms are: em bout 'be-at-me'; ha pout 'be-at-you(s)'; hé dout 'be-at-her'; on bout 'be-at-us'; ho pout 'be-at-you(p)'; o dout 'be-at-them'.

[8] For more details, see Schapansky in preparation.

[9] See footnote 1 for the other Breton dialects.

The shift in the auxiliary selection is a shift towards control, resulting in greater transitivity. The shift towards ergativity is a shift departing from the active-stative system. It is a shift towards control, thus towards subject prominence, in a language where the syntactical differences between the subject and the object are minimally expressed, leading to syntactic but not semantic ambiguities (see Schapansky 1992a).

4. CONCLUSION. To conclude this study, we have seen that the auxiliary selection in Breton follows the Unaccusative Hypothesis. Strong verbs, corresponding to unergatives, take the auxiliary endout 'to have' in complex tenses, cannot form past participial absolutes and are insensitive to the definiteness effect. In contrast, weak verbs corresponding to unaccusatives, take the auxiliary bout 'to be' in complex tenses, can form past participial absolutes and are sensitive to the definiteness effect. We have also seen that, with weak verbs, the auxiliary selection is semantically levelled. The existential predicate éh es 'there is' must occur with indefinite nominals. When definite nominals are unmarked for control, then the auxiliary bout 'to be' is used. When definite nominals are marked for control, then the auxiliary endout 'to have' is used. Furthermore, the association of endout with control relates to the development of ergativity in the language. The shift in the auxiliary selection with the class of weak verbs and reflexives is a shift towards transitivity departing from the active-stative system.

The paper makes the following contributions. It offers a unique opportunity to study the syntax/semantics interface with respect to auxiliary selection in a language like Breton. It also gives an opportunity to study the development of ergativity from a nominative/accusative base system.

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# V

# LEXIS AND SEMANTIC/PRAGMATIC MEANING

# THE PROCESSES AND EFFECTS OF COMPOUNDING

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Compounding, the creation of new words consisting of two or more components, is a well-entrenched process in English, inherited from ProtoGermanic. It occurs in Old, Middle, Early Modern, and Modern English. The process involves the joining together of two or more separate words from either the same word class or from different word classes to form a new compound word. The components can be drawn from any of the primary word classes: noun, adjective, verb, adverb, preposition. These compounds create new nouns, adjectives, and verbs, the catagory determined by their use in a sentence as either a noun, adjective, or verb. Their sentence function is not restricted to the function of one word class (noun, adjective, or verb) because each can be used in any of the word class positions, thus crossing function lines. Therefore, sentence function can be either subject, direct object, indirect object, prepositional object, or verb, according to how the compound is used.

The meaning of each of these compounds differs from the separate meanings of the individual elements making up the compound. It is not just an amalgamation of the old meanings. The meaning is entirely new and fits a specific context, which determines the new meaning. For instance, moldwarp (H4.1.3.1.149) does not just mean 'to throw dirt' (OE molde 'earth' + OE weorpan 'to throw') but also 'a mole', which in turn could be a reference to a man's occupation or a metaphor for 'a secret enemy agent or spy'--in other words, 'a mole'. Context determines whether moldewarp refers to an actual mole or a farmer, or is a metaphor for an undercover enemy spy, established as a societal member in good standing.

Compounding offers considerable benefits to the writer. It creates new words with new meanings out of "old" words and "old" meanings to fit a current situation. The meaning can be, and often is, metaphorical. The compounding process used by Shakespeare does not differ from the one used by others before or since. The difference between his compounds and those of others lies in the brilliance of his choice of components and the new meanings.

Two types of compounds occur in Shakespeare's works. Type I consists of ordinary mundane compounds that have only one level of meaning--an overt, literal meaning. It consists of commonplace, words united into commonplace and ordinary compounds like 'marriage-day'; 'cradle-cloths'; 'warlike Goths'; 'childbed'; 'noble-minded gentlemen'; 'thrice-noble' Titus'; 'cut-off'; 'o'erturn'; and 'break-open'. Even so, a covert, metaphorical meaning can be hidden beneath an ordinary meaning, e.g., 'whoreson' can refer to a whore's son (Type I) or it can be an epithet referring to low-class, vulgar behavior (Type II).

This paper is concerned with Type II compounds, how they are formed, their metaphorical use, the impact of them upon the reader/playgoer, and their interest to literary and linguistic research. A Type II compound results from the joining of words whose compound meaning is brilliantly creative and different from the separate meanings of the parent components, such as, 'fat-already pride'--his pride out of bounds; and 'all pitiful goers-between'--vacillators.

Compounding permits the uniting of words from one word class with those from either the same class or from the other classes, thus joining adverbs, prepositions, and/or adjectives with nouns, adjectives, and present or past participle, or infinitive verb forms. These Type II compounds also can shift sentence function as required. They are not restricted to use in the particular word class position but can be used in any position. Shakespeare uses these to provide pithy thumb-nail sketches, caricatures, encapsulated histories, and metaphors of a person, name, feature, thing, place, occupation, or activity. These still intrigue the reader and playgoer, e.g., 'this fatal-plotted scroll'; 'my deadly-standing eye'; Hopdance' (name); 'be-monster (verb) not thy feature'; 'a canvas-climber'; 'the thunder-darter of Olympus'.

Perusal of OE and ME literature shows that multiple compounds occur, occupy various sentence positions, and assume word class functions of those positions just as occurs in the Shakespearean canon. In Old English, the compounds of both types occur as nouns and adjectives in subjective, gentival, adjectival, and objective functions. It is interesting to note that very few compounds are given a verbal function other than those inherited from ProtoGermanic--all belonging to Type I, e.g., 'forbaernan' to burn up, 'onwendan' to overturn, 'underþeodan' to subject. However, verbal elements occur in compounds used in nominal and adjectival functions. Type II compounds often occur as kennings in OE literature. A kenning is a figurative, characterizing periphrasis, or circumlocution, that is sometimes metaphorical.

1) 'brynegield'--burnt yielding/offering; N + V; Gen A 2932
2) 'mines felaleofan'--my much-beloved's; adj + adj; noun substantive; Seafarer 16
3) 'merewerges mod'--the mind of the seaweary; N + adj; noun substantive; Seafarer 12
4) 'reordberend'--speech-bearing; N + Vprp; a metaphor for 'man'; Dream of the Rood 3
5) 'hildenaedre'--battle-adder; N + N; a kenning and a metaphor for 'arrow'; Judith 221
6) 'herelaf'--battle-leavings; N + V; a kenning and a metaphor for battle survivors; Battle of Brunanburh 47

Middle English compounds of both types occur. Like OE, verb compounds are fewer in number than the nominal and adjectival compounds. These other compounds also are not given a verb function very often.

7) 'aȝenbite of inwit'--against-bite, backbite, remorse, or prick of within wit or conscience; adv + V, prep + N; original title by Dan Michel of Northgate, not translation of French title Somme des Vices et des Vertues

Other Type I examples are:

8) 'soþ-saȝe'--sooth/truth-saying or prophecy; N + V; O&N 1038
9) 'overclambe'--climbed up or over; adv + V; GGK 713
10) 'chirche-song'--church-song; N + N; O&N 984
11) 'to-kirke-ward'--towards church; prep + N + adv; Piers Plowman B.P.5.305 (Langland)
12) 'pese-holes'--pea-hulls; N + N; Prodigal Son 10 (Wyclif)
13) 'fot-hot'--quickly; N + adj; Book of the Duchess 375 (Chaucer)

One of the most effective Type II compounds that Shakespeare created results from using a phrase or part of a sentence to form a compound. These are given adjectival or nominal positions and functions. Such compounds provide a book-long-like description or commentary in the form of a thumb-nail sketch. The intent and meaning of the author are evident.

14) 'some never-heard-of-torturing-pain'--unbearable pain; TA 2.3.285
15) 'one-trunk-inheriting slave'--statement of lower class status or behavior; KL 2.2.20
16) 'a rascally yea-for-sooth knave'--tries to please all; H4.2.1.1.140
17) 'I'll venture one have-at-him'--beat the hell out of him; H8.2.2.85
18) 'these same-metre-ballad-mongers'--lacking poetic talent; H4.1.3.1.130

Ordinary Class I compounds can be given a different sentence function also . This process changes them from Class I to Class II because they provides an entirely different connotation, as in:

19) 'heir-apparent' H4.1.2.4.296 versus 'thine own heir-apparent garters' H4.1.2.2.46

Here the change of function from noun to adjective changes a statement of fact about a prince/subject relationship to a delineation of a friendly relationship between almost-equals which includes a hint of sly impudence from the one of lesser social status (Falstaff to the future Henry V).

20) 'plough-torn leas'--ravaged land TAth 4.3.193 vs. 'ploughed leas'--neatly plowed land

The contrast here is one of result.

21) 'his plain-song'--Gregorian chant H8.1.3.45 in contrast to 'the plain-song cuckoo' MSND 3.1.134

Here a similarity is developed between the restricted note range of Gregorian chant and the cuckoo's two-note call.

Interesting adjective compounds occur which really have

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*little or no meaning although they provide atmosphere.* The sound patterns that occur in each compound hint at meanings appropriate to the context. The mechanisms used to accomplish this are alliteration (24, 26); vowel alternation (24, 26); initial or medial consonant alternation (22, 23, 25, 26); vowel and consonant repetition (22, 23, 25).

22) handy-dandy KL 4.6.156
23) pell-mell H4.1.5.1.82
24) skimble-skamble H4.1.3.1.154
25) helter-skelter H4.2.5.3.98
26) topsy-turvey H4.1.4.1.82

Type II compounds are created out of words from the various major word classes, some with various bound morphemes and/or movable particles incorporated into some compounds. The union of these components gives very interesting results. These are the most productive patterns found in the canon. The great variety of the combinations gave rise to marvelous meanings and descriptions, as well as pithy sayings and comments.

27) 'sweet king-killer'--murderer of kings; N + V + -er; NF; TA 4.3.382
28) 'day-wearied sun'--sunset; N + adj + -ed; AF; KJ 5.4.35
29) 'clip-wing'd griffin'--a man who is constrained or restrained; V + N + -ed; AF; H4.1.3.1.152
30) 'eagle-wing'd pride'--soaring pride; N + N + -ed; AF; R2.1.3.129
31) 'all the standers-by'--gawkers, do-nothings; V + -er + -s + particle; NF; R3.1.2.163

The extensive and diverse patterning of the word class combinations permits Shakespeare to develop textual richness in imagery of character, scenery, and plot. Somehow 'addle-pated rascal' is more germaine and colorful, providing nuances lacking in 'dumb idiot' even though 'dumb idiot' is accurate. The examples given below illustrate the diversity of nuance and richness in imagery, both of which are brought about by the great variety existing in the element patterning. The examples below illustrate only some of the patterns found in the Canon. In most cases they are completely understandable in meaning today.

Combination patterns used in adjective position and having adjectival function are:

32) 'out-contracted bachelors'--knights lacking a contract with a lord; adv + Vpp; H4.1.4.1.17
33) 'cut-purse rascal'--thief who cuts into purse and grabs money; V + N; H4.2.2.137
34) 'beauty-waning widow'--aging; N + Vprp; R3.3.7.185
35) 'this dead-killing news'--catastrophic news; adj + Vprp; R3.4.1.36
36) 'dizzy-ey'd fury'--adj + N + -ed; H6.1.4.7.11
37) 'date-broke bonds'--overdue; N + Vpp TAth 2.2.38
38) 'ye [the] alehouse-painted signs'--signs that are like signs on pubs; N + N + Vpp; TA 4.2.150
39) 'my weav'd-up follies'--made-up; Vpp + particle;

*R2*.4.1.238

Those compounds given noun functions are every bit as colorful and nuance-bearing as those with adjectival functions. They, too, are pleasure giving.

40) 'you wag-tail'--curries favor by fawning behavior; V + N; *KL* 2.2.73
41) '[a] pick-purse'--a pickpocket; V + N; *H4*.1.2.1.53
42) 'the signs of leaping-houses'--bawdy houses; Vprp + N; *H4*.1.1.2.9
43) 'my more-having'--richer; adv + Vprp; *MacB* 4.3.81
44) 'mouth-friends'--back-stabbers; N + N; *TAth* 3.6.97
45) 'trencher-friends'--spongers; N + N *TAth* 3.6.106
46) 'the let-alone'--no interference; V + adv; *KL* 5.3.78
47) 'a divine thrusting-on'--God made me do it; Vprp + particle; *KL* 1.2.136

Type II compounds used as verbs are much increased in use by Shakespeare over their usage in ME and OE. They provide some of the most interesting compounds insofar as meaning and nuance go, conjuring up both horrible and delightful mental images for the listener/reader.

48) 'he coffers-up his gold'--buries it deep within a chest; N + # + particle; *RofL* 855
49) 'I in women out-paramour'd the Turk'--self-explanatory; adv + N + -ed; *KL* 3.4.94
50) 'he out-craftied him'--beat with better skill; adv + adj + -ed; *Cym* 3.4.14
51) 'to cut-purse'--cut pocket, steal purse; V + N; *H5*.5.1.91
52) 'the gum down-roping from their eyes'--runny eyes; adv + Vprp; *H5*.4.2.48
53) 'it out-herods Herod'--more murderous; prep + N + #; *Ham* 3.2.16
54) 'to out-voice the sea'--noisier than; adv + V; *H5*.5.Prol.11

Competition exists between two forms with adjectival function that is not resolved until long after Shakespeare's time. The conflict is between N + N and adj + N compounds without or with the adjectival bound morpheme *-ed* added onto the last element of the compound.

55a) 'the arrant malmsey-nose knave'--N + N; *H4*.2.2.1.4.2
b) 'the red-nose inn-keeper'--adj + N; *H4*.1.4.2.50
c) 'the fleet-foot roe'--adj + N; *V&A* 561
d) 'your French-crown-colour beard'--golden; N + N + N; *MSND* 1.2.97 versus
56a) 'your raven-colour'd beard'--black; N + N + -ed; *TA* 2.3.83
b) 'the hook-nos'd fellow'--Roman nose; N + N + -ed; *H4*.2.4.3.44
c) 'late-foot'd in the kingdom'--late arrival; adj + N + -ed; *KL* 3.7.57

The conflict is resolved in Mod E in favor the use of -ed.

Type II compounds pervade most acts of each Shakespearean play. In those acts or scenes where they are limited in use and Type I compounds dominate, various scholars have suggested there is a question of authorship. However, no scholarly argument with evidence ensues to show that Type II compounds distinguish Shakespeare's writings from those of others or conversely that the almost sole use of Type I compounds shows the work is not Shakespeare's but someone else's. The comments which are presented in the literature are not evidence. They are impressionistic, subjective opinions of the author's belief that the writing is mundane, dull, and just doesn't sound like Shakespeare.

The question of authorship was examined. The data were analyzed to see if there were sufficient evidence to support the hypothesis in those plays with questionable authorship of some sections (Titus Andronicus, Pericles, Prince of Tyre, Henry the Sixth Part 1, Troilus and Cressida, MacBeth). The findings were then compared to the finding from those plays definitely ascribed to Shakespeare, (Twelfth Night, King Lear, Henry IV, Henry V, Othello, Antony and Cleopatra). Preliminary analysis suggested that the hypothesis that the dominant use of Type I or Type II compounds could either support or deny Shakespeare's authorship if there were other supportive facts. However, indepth analysis revealed that although the suggestion was plausible, no corroborant evidence was found to definitively support the preliminary hypothesis.

The conclusions derived from this study are as follows:

1) Many-layered meanings and implications occur in many of the Type II compounds--almost every one is a puzzle. These meanings have to be ferreted out.

2) The processes involved in compounding do not differ from those used before and after Shakespeare.

3) Context can change an ordinary Type I compound to a Type II one, the latter containing interacting layers of meaning and nuance.

4) Competition between forms occurs in the use or not use of the adjective morpheme -ed. This competition is not resolved until long after Shakespeare's time.

5) Understanding the interaction between the covert and overt meanings of the compounds and the conflicts between overt and covert nuances, however subtle, adds much to the perception and appreciation of plot and character and overall impact of each play.

6) Multiple pattern combinations for compounding of words from the primary word classes are available for use.

7) Sentence functions of the compounds are interchangeable. Type II compounds function in whatever sentence position they occupy in exactly the same way as a word from a specific word class does, i.e., in a noun position the compound will act just as a noun would in a specific noun position: as a subject, direct, indirect, or prepositional object. The same compound can also function as a verb when so used.

8) The use of compounds permits an author with an economy

of words to interject covert subtleties and relationships into the text otherwise not possible.

Note: Read H4.1.3.6.241 and other citations as Henry the Fourth, Part 1, Act 3, Scene 6, Line 241. Type I examples of compounding are from the various Shakespearean works. As they were so ordinary, their sources are not cited.

## ABBREVIATIONS

1. Cym = Cymbeline
2. Gen A = Genesis A
3. GGK = Gawain and the Green Knight
4. Ham = Hamlet
5. H4.1 = Henry 4, Pt. 1
6. H4.2 = Henry 4, Pt. 1
7. H5 = Henry 5
8. H6.1 = Henry 6, Pt. 1
9. H8 = Henry 8
10. KJ = King John
11. KL = King Lear
12. MacB = MacBeth
13. MSND = Midsummer Night's Dream
14. O&N = Owl and Nightengale
15. R2 = Richard 2
16. R3 = Richard 3
17. RofL = Rape of Lucrece
18. TA = Titus Andronicus
19. TAth = Timon of Athens
20. V&A = Venus and Adonis
21. AF = adjective function
22. NF = noun function
23. OE = Old English
24. ME = Middle English
25. EModE = Early Modern English
26. V = verb, infinitive or tense carrying form
27. Vpp = past participle
28. Vprp = present participle
29. adj = adjective
30. adv = adverb
31. prep = preposition
32. N = noun
33. # = number and person
34. -s = plural number
35. -er = agent marker
36. -ed = Vpp suffix (on verb)
37. -ed = adjective suffix (on noun or adjective)

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# VARIATIONS OF FORMALLY IDIOMATIC CONSTRUCTIONS AND RELATIONS AMONG THEM: THE CASE OF CONCESSIVE CONDITIONALS

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## 1. Introduction*

### 1.1. The centrality of formal encoding idioms

Idiomaticity is one of the key phenomena in language — an insight we owe largely to Adam Makkai's seminal work (1965, 1972) on idiom structure in English.[1] One of the most important and interesting points that Makkai makes is the distinction between what he calls 'semantic idioms' and 'phraseological idioms', or between 'decoding idioms' and 'encoding idioms'.

> The phraseological idiom compels the speaker to ENCODE in a certain way, hence it is an IDIOM OF ENCODING. The semantic idiom, on the other hand, forces the hearer to DECODE in a certain way, hence it is an IDIOM OF DECODING. Now there exists a curious incorporating (or overlapping) distribution between these two kinds of idioms. It seems fair to assume that all idioms of decoding (semantic idioms) are simultaneously idioms of encoding as well, but NOT *vice versa*. Some idioms of encoding (phraseological idioms) are not subject to misunderstanding, or lack of understanding even on the first encounter. (Makkai 1972: 57)
> [capitalization in original]

In making this distinction, Makkai draws our attention to the importance of 'encoding idioms'. The meanings of 'encoding idioms' may be comprehended from context or by general analogy on the first encounter even by learners of the language (whether children or non-native speakers), but learners can never produce them correctly until they have learned the conventional forms and functions of the expressions separately and explicitly.

Building upon Makkai's exposition, Fillmore and Kay, in their Construction Grammar approach (Fillmore 1985, 1988, 1989; Fillmore, Kay & O'Connor 1988; Fillmore & Kay 1992), pay serious attention to idiomaticity in language, espousing the view that the more or less irregular idiomatic aspects of language constitute a major part of a language's grammar and therefore need to be systematically included in the description of that grammar. In discussing the issue of idiomaticity, Fillmore and Kay propose an *idiomaticity cline*, as follows:

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[*] This paper is a synopsis of part of Chapter 5 of my dissertation (1993). I have benefited from comments on the chapter from Charles J. Fillmore and Orin Gensler, and on my earlier papers from Yoshiko Matsumoto, Laura Michaelis, Janet Shibamoto, Eve Sweetser, and participants in the 1988-89 Japanese Linguistics seminar at U.C. Berkeley. My thanks also go to participants of LACUS 21, especially Miharu Akimoto and Minoji Akimoto, for valuable comments. Needless to say, any errors are my own.

[1] Recent studies pointing to the importance of idiomaticity include Akimoto (1992, 1993) and Powell (1994).

> We find at one end of an *idiomaticity cline* constructions which have no specific lexical information associated with them, such as, for example, the simple *subject-predicate construction* of English and a number of other languages. At the other end of such a continuum are constructions which have all of their lexical fillers conventionally specified and their meanings identified independently of these: the true idioms. In between we find all sorts of possibilities, including idioms which have freely fillable positions inside them, fixed collocations of various sorts, etc. (1987: 12)

The middle ground — the territory of half-idiomatic and half-productive phenomena — is prominent in language, and can be most naturally described through the model of grammatical constructions. Fillmore (1989) argues that vast domains of syntax require treatment in terms of grammatical constructions, holistic grammatical patterns characterizing structures whose properties do not, in any obvious or familiar way, 'follow from' what can be independently known about their constituent elements. These properties may be motivated by, but do not necessarily follow from, facts about the composition of the constituent elements.

When I started to study conditional sentences in Japanese several years ago, I did not have any idea how crucially the phenomenon of idiomaticity figures in the use of conditionals and clause-linking devices in general. But after examining naturally occuring data and encountering many different types of idiomatic and semi-idiomatic expressions, I have become convinced that without describing such idiomatic expressions systematically and in their own terms, we cannot capture the full range of forms and meanings of conditional constructions.

Many of the idiomatic expressions that we have to deal with are *formal idioms* in the sense of Fillmore, Kay & O'Connor (1988). A formal idiom has part but not all of its lexical content pre-specified and the construction as a whole must be associated with a particular constructional semantics and pragmatics. These idioms are normally encoding idioms rather than decoding idioms. I have thus been led to the conclusion that many conditional clause-linking constructions in Japanese can properly be characterized as formal encoding idioms.

### 1.2. The focus of this paper

In this paper, I will present a case study which demonstrates the richness of formal encoding idioms, and the relations among these formally idiomatic variants. The case presented here involves a specific family of Concessive Conditional Constructions ('C.C.C.') in Japanese featuring the clause-linking morpheme TEMO (TEMO constructions hereafter). It should be noted, however, that the general idiomaticity phenomena discussed here have been found with all the conditional constructions featuring other linkers as well (e.g., TARA, TO, NARA, etc.), and are not unique to TEMO.

The base TEMO construction is illustrated in (1):

(1) [subordinate clause-TEMO (DEMO)], [main clause]
(1a) ***isogasikutemo***, *kite kudasai.*
'be busy' TEMO, please come
Even if you are busy, please come.

Its closest equivalent in English, as the translation of (1a) shows, is the EVEN IF construction — though the match is not exact. The TEMO construction has a variety of uses (cf. Fujii 1989, 1990a, 1990b); for schematic summary, see the figure in Appendix I. In this paper, I will focus on three idiomatic variants of the

TEMO construction (Section 3), represented by the three large circles at the bottom of the figure. As a necessary preliminary, and for purposes of contrast, I will first discuss a scalar-based use of the TEMO and EVEN IF constructions (Section 2), represented by the circle at the upper right corner of the figure.

## 2. Scalar-based Concessive Conditionals and 'unconditionality' by *a fortiori* logic

Just like the English EVEN IF construction, the TEMO construction can imply the unconditional truth of its consequent. As discussed in Fujii (1989, 1990a), this can be done by *a fortiori* logic, with the antecedent presenting an extreme case and evoking a scalar entailment. To see how this rhetorical reasoning works, consider sentences (2) through (5).

**Scalar-based Concessive Conditional Construction (C.C.C.)**

(2) *bon to syoogatu ga issyoni kitemo simeru wake ni wa ikanai.*
the 'Bon' Festival and New Year's Day together come TEMO cannot close
Even if the 'Bon' Festival and New Year's Day came together,
we still could not close the store. <T.V. Drama>

(3) *tenti ga hikkuri kaettemo, kore dake wa yuzurenai.*
heaven-earth NOM turn over TEMO, this at least TOP give up POT NEG
Lit. Even if heaven and earth got reversed, I still could not give this up in the least.
By no means can I in the least give this up.

(4) Even if the earth opened up and swallowed me, I wouldn't do what you asked me.

(5) Even if hell freezes over, I'll never fall in love with you.

When we intend to present a conclusion forcefully, one way we can do so is to initially posit a condition that is normally less likely to lead to the intended conclusion, and note that — paradoxically — the conclusion holds anyway. Doing this yields, *a fortiori*, a stronger emphasis on the absoluteness of the conclusion, i.e., of the assertion or other speech act presented in the consequent. Note that, by explicitly presenting the least likely condition, we implicitly achieve '*complete coverage*' of all possible conditions. This notion of 'complete coverage' will surface again in a moment.

The stated antecedent in this type of argument is the event or state least (or less) likely to lead to the stated consequent. This does not necessarily mean that the event or state expressed in the antecedent is independently least likely to be true in the real world. But in some concessive conditionals that are used to present a strong argument for the unconditionality of the consequent, the antecedent does in fact express an event or state that is very unlikely to be true, or is simply impossible, in the real world, as seen in (2) through (5). In (2), the 'Bon' Festival (or the Lantern Festival) is an annual Buddhist religious ritual that falls in the middle of August. It obviously never comes together with New Year's Day in January. By employing the impossible antecedent 'even if the 'Bon' Festival and New Year's Day came together', the speaker emphasizes the unconditionality of the statement in the main clause.

For native speakers of Japanese, the antecedent in both (2) and (3) is a fixed expression, almost a cliche. Similarly, English native speakers perceive the antecedent in (4) and (5) to be phraseologically idiomatic in English. These cases fall into one type of fixed formulaic antecedent, one which is based on a more general scalar-based concessive conditional construction. The general *productive* schema for scalar-based concessive conditionals does not necessarily refer to impossible events in the antecedent, but many formulaic antecedents based on this do seem to appeal to impossible events; perhaps such emphatic uses are culturally-based, and must be conventionalized to some degree in order to sound natural.

In the figure shown in Appendix I, the scalar-based use of the TEMO construction, including both productive cases and formulaic cases, is represented by the circle at the upper right corner. Note that both the Japanese TEMO and the English EVEN IF constructions have this scalar-based, *a fortiori* use.

## 3. Three formally idiomatic variations of the TEMO construction

With the Japanese TEMO construction, *a fortiori* logic is not the only way of conveying 'complete coverage' of the condition and unconditionality of the consequent. Section 3 will discuss three idiomatic variants of the TEMO construction, involving different means of deriving unconditionality of the consequent. (These subconstructions are represented by the three large circles at the bottom of the figure in Appendix I.)

### 3.1. Alternative Concessive Conditionals

One way Japanese can make use of the TEMO construction is to express two or more specified alternatives that lead to the same consequent. I will call this the 'Alternative Concessive Conditional Construction' (Alternative C. C. C.)[2]. The antecedent of the Alternative C.C.C. has two parts each marked with TEMO, and the bipartite antecedent as a whole functions as an adverbial to the main clause. Although the regular productive use of TEMO clause-linkage involves subordination rather than coordination, the two parts within the antecedent in the Alternative C. C. C. are coordinated.

**Alternative Concessive Conditional Construction:**
**[ [[ -temo] [ -temo]], ]**
**Unconditionality by appealing to stated alternatives leading to the same consequence**

**3.1.1.** The alternative C.C.C. has two subtypes. The first, represented by (6) through (11), is what I will call the '**Opposed Alternatives C.C.C.**', wherein the antecedent explicitly states both of the opposed possibilities as a dichotomous opposition.

**Opposed Alternatives Concessive Conditional Construction:**
**[ [[ P -temo] [ ~P -temo]], Q ]**
**Unconditionality by appealing to P and ~P, both of which lead to the same Q**

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[2] As in Fujii (1989), I adopt the term '**alternative**' used by Quirk et al. (1972) and Quirk et al. (1985). Their original term — which they apply to the English 'whether X or Y' construction — is 'ALTERNATIVE CONDITIONAL-CONCESSIVE'.

| | | | | | | |
|---|---|---|---|---|---|---|
| (6) | *Benkyoo* | *sitemo* | *sinakutemo* | *doose* | *dame* | *daroo.* |
| | study | do TEMO | do-NEG TEMO | anyway | bad | MOD |

Lit. Whether (I) study or do not study, it will be bad anyway.
It won't work (I won't make it), whether I study or not.

| | | | | | |
|---|---|---|---|---|---|
| (6') | *Benkyoo* | *sitemo* | *doose* | *dame* | *daroo.* |
| | study | do TEMO | anyway | bad | MOD |

Lit. Even if (I) study, it will be bad (it won't work) anyway.

For example, in (6), the antecedent presents the possibilities of both 'studying' and 'not studying'. Both the opposed conditions bring about the same result stated in the consequent 'I won't make it'. An equivalent sentence containing only the first possibility 'studying' (6') could also imply the unconditional truth of the consequent, but in a less explicit way. By adding the opposite possibility 'not studying' in (6), the unconditionality is expressed more directly and thus more strongly, inasmuch as these two binary alternatives cover all possibilities in the relevant universe.

The opposed alternatives presented in the antecedent clause can consist either of a term and its grammatical negation, as in (6), or of semantically opposite expressions, as in (7) through (11).

| | | | | | |
|---|---|---|---|---|---|
| (7) | *ano itiban* | *ookii isi-tooroo wa* | *moo* | *zimen ni* | *hukaku* |
| | that biggest | stone lantern TOP | already | ground DAT | deeply |
| | *kuikonde ite* | | | | |
| | root itself (sunk) | | | | |
| | *ositemo* | *hiitemo* | *bikutomo sinakatta kara* | | |
| | **push** TEMO | **pull** TEMO | 'did not move at all' because | | |
| | *zannen dakedo oite kimasita.* | | | <from an informal letter> | |
| | regretful although leave (it) behind come-PAST | | | | |

Lit. Because, though we pushed and pulled it, that biggest stone lantern had already rooted itself deeply in the ground and did not move a bit, though such a pity, we left it behind.

We pushed and we pulled, but that biggest stone lantern had already rooted itself deeply in the ground, so we regretfully left it behind.

| | | | | | |
|---|---|---|---|---|---|
| (8) | *Saikin* | *netemo* | *sametemo* | *kurarinetto ..* | *kurarinetto ...* |
| | recently | **sleep** TEMO | **wake up** TEMO | clarinet | clarinet |
| | *Fumi wa kurarinetto no koto de* | *atama ga* | *ippaina n' dakara.* | <a letter> | |
| | Kumi TOP clarinet with | head NOM | be filled N because | | |

Lit. Whether (she) sleeps or wakes up, clarinet ... clarinet ... recently Kumi has nothing but clarinet in her head.

Recently Kumi thinks about nothing but the clarinet, whether she is asleep or awake.

In (7) *ositemo hiitemo* (whether we pushed or pulled it), *osu* (push) and *hiku* (pull) are presented as opposed alternatives, both resulting in the same conclusion expressed in the consequent clause 'it did not move at all'. In (8), the pair *neru* (sleep) and *sameru* (awake) is used to indicate 'all the time', or 'day and night'. More examples containing opposed bipartite antecedents (here underlined) are given in (9) and (10):

(9) *Naitemo warattemo* *happyoo* *made* *ato itiniti* *da.*
**cry** TEMO **laugh** TEMO announcement until one-day

Whether (you) cry or laugh, there is only one day before the announcement.

(10) ***Semetemo mamottemo*** *kare wa* *yappai* *uti no nanbaa wan da.*
**offense** TEMO **defense** TEMO he TOP still our number one

Lit. Whether (he) plays offense or defense, he is number one on our team.
On our team, he is the best in both offense and defense.

Such pairs of opposite expressions (*ositemo hiitemo, netemo sametemo, naitemo warattemo, semetemo mamottemo)* are often collocated, making each of the bipartite antecedents a highly idiomatic fixed expression in Japanese.

As shown in (11), unlike examples (7-10), the bipartite antecedent may repeat the identical verb and express the oppositeness via some other element in the clause:

(11) *Kono oobo-kikan tyuu nara,* ***hayaku dasitemo***
this application-period within IF, **early** mail TEMO

***osoku dasitemo*** *toosen kakuritu wa* *mattaku onazi desu.*
**late** mail TEMO lottery-winning probability TOP completely the same

Lit. If (it is) within this application period, whether (you) mail (it) early or late, the probability of winning the lottery will be absolutely the same.
It won't make any difference to your chances of winning the lottery whether you mail (it) earlier or later within the application period.

The two parts of the antecedent in (11) repeat the same verb *dasu* (mail), with the contrastive adverbs *hayaku* (early) and *osoku* (late).

We thus see that this formal idiom, the Opposed Alternatives C.C.C., is highly productive. At the same time, as illustrated in (7) through (10), the construction provides a syntactic formula that unifies many pairs of collocated verbs that are semantically opposed to each other, yielding fully fixed phraseological idioms.

**3.1.2.** The second type of alternative C.C.C. I will call the '**Listed Alternatives C.C.C.**', as illustrated in (12) through (14).

**Listed-Alternatives Concessive Conditional Construction:**
**[ [[ P1 -temo] [ P2 -temo] ( [P3-temo][P4-temo] ... ) ], Q ]**
**Unconditionality by appealing to a set of representative alternatives P1, P2, (P3, P4 ... ), all leading to the same Q**

(12) ***denwa o sitemo tegami o dasitemo*** *tittomo aiteni sitekurenai si ...*
call up TEMO send a letter TEMO 'not respond at all'
(He) pays no attention whether I call him or write to him. <a letter>

(13) *X-san no kigen o* *naname ni sitara,* *moo saigo.*
Ms. X GEN feeling ACC (hurt her feelings) IF, 'that's it'
Once you upset Ms. X, that's it.

***hometemo sukasitemo,***
**give compliments** TEMO **humor** TEMO

*issyuukan wa kuti o kiite kurenai n' dakara.*
she won't talk to you for at least a week.

For, whether one compliments or humors her, Ms. X won't talk to you for at least a week <conversation>

(14)... *aayuu hito o* ***nitemo yaitemo*** *taberarenai hito-tte yuu no yo ne.*
such a person ACC **boil** TEMO **roast** TEMO non-edible person QUO say

Lit. We call such a person 'a person who is not edible whether boiled or roasted'. <conversation>

The stated alternatives here, which are not necessarily set off in sharp contrast against one another, are representative cases that the speaker presents in order to evoke some fuller range of possible conditions, and to assert the consistency of the same result within a relevant set of situations — not only under the several explicitly stated conditions, but under all possibilities within the evoked larger set. In (12), for example, by giving the two cases *denwa o sitemo tegami o dasitemo* (whether I call or write to him), the speaker implies the whole gamut of relevant cases, thus explaining that, no matter what means he used, the result was the same.

Here again, while the syntactic idiom *per se* is a productive construction with the two slots in the bipartite antecedent being freely filled with various verb phrases, the bipartite antecedent itself can often be phraseologically idiomatic, as seen in (13) and (14). The antecedents, *'hometemo sukasitemo'* (whether one compliments or humors her) in (13) and *'nitemo yaitemo'* (whether one boils it or roasts it) in (14), are formulaic, containing a pair of verbs which collocate with each other in Japanese.

### 3.2. Universal Concessive Conditionals

In another variation using TEMO, the Universal Concessive Conditional Construction (Universal C.C.C.)[3], complete coverage is asserted via universal quantification — *any* value of the indeterminate pronoun (WH-variable). As shown in (15) through (17), in Japanese, indeterminate pronouns[4] (Wh-words) such as DARE (who), DOKO (where), NANI (what), ITU (when), IKURA (how much), DONNANI (how), and DOTIRA (which) often participate in the TEMO construction, presenting non-specific, 'free-choice' situations for the antecedent.

**Universal Concessive Conditional Construction**
**[ [Wh- P -temo] Q ]**
**Unconditionality by appealing to any number of values (any value at all) for the variable in the condition, all leading to the same consequence**

---

[3] The original term in Quirk et al. (1985) and Quirk et al. (1972) is UNIVERSAL CONDITIONAL-CONCESSIVE. I refer to these in Fujii (1989) as 'non-specific concessive conditionals' as well as 'universal concessive conditionals'.

[4] These 'Wh-words' are interrogative words used to construct questions. But they can also be used to express *'EVERY'* (e.g. *dare mo*, 'everybody') and *'SOME'* (e.g. *dare ka*, 'somebody') when bound by the particle *mo* or *ka*. (For details see, for example, Fukushima 1991 and Kawashima 1993.) Following Kuroda (1965) I use the term 'indeterminate pronouns', or more simply 'Wh-words' (or 'Wh'), to refer to these words (e.g., DARE, DOKO, etc.).

Using DARE (who):
(15) ***DARE** ga* *yatte-mitemo* *dekinai* *daroo.*
**who** NOM do-try TEMO cannot do MOD
No matter who tries it, (s)he will not be able to do it.
Whoever tries it will not be able to do it.

Using DOKO (where):
(16) ***DOKO** o* *sagasitemo* *mitukaranai* *yo.*
**where** ACC look TEMO find-NEG PART
No matter where you look, you won't find it.

Using NANI (what):
(17) *Uti no bosu wa* ***NANI** ga attemo* *doozinai.*
my boss TOP **what** NOM happen TEMO get upset (moved)-NEG
No matter what happens, my boss won't get upset.

The antecedent of (15), with DARE (who), means 'No matter who tries it,'; the utterance as a whole asserts that, within the relevant universe evoked by the antecedent, there will be absolutely no difference to the result described in the consequent clause, that is, 'will not be able to do it'. Unconditionality is here asserted by appealing to any value of the variable expressed by the indeterminate pronoun in the antecedent, all of which lead to the same consequence.

This formally idiomatic construction also yields a number of fully fixed idioms, as will be discussed in Section 4.

### 3.3. Reduplicative Concessive Conditionals

A third formally idiomatic construction using TEMO, which I will call the Reduplicative Concessive Conditional Construction (Reduplicative C.C.C.)[5], reduplicates the verb (or verb phrase) in the antecedent, as illustrated in (18):

(18) *denwa o* *kaketemo kaketemo* *tuuzimasen.* <from a letter>
telephone ACC call TEMO call TEMO connect-NEG
I never reach him no matter how often I call him.

$$[\ [[\ P_i\ \text{-temo}]\ [\ P_i\ \text{-temo}]],\quad Q\quad ]$$

This construction demonstrates yet another way to emphasize the unconditionality of the truth of the consequent: the repetition of the same idea by repeating the same verb (phrase) in the antecedent. Such repetition indicates either that the same action was repeated over and over indefinitely (e.g., 18), or that the state expressed by the verb lasted indefinitely (e.g., 19).

(19) *Mattemo mattemo* *Kto-san wa* *tootoo* *arawarenakatta.*
wait TEMO wait TEMO Ms. Kato TOP after all 'did not show up'
Even though I waited for a long time, Ms. X did not show up.

Regardless of the multiply repeated action or the indefinitely prolonged state, the conclusion never changes. The construction as a whole thus asserts that such repeated actions or prolonged states invariably bring about the same result, thereby implying its absoluteness.

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[5] Along with other constructions utilizing verb reduplication, Okamoto (1991) discusses this particular use of the TEMO construction and analyzes the regularity and irregularity involved in this verb reduplicative construction.

### 3.4. Synthesis

Formally, all the variations presented thus far (the Alternative, Universal, and Reduplicative C.C.C.s) stem from the base TEMO construction. At the same time, however, they involve special idiomatic combinations of forms (P temo ~ P temo Q; P1 temo P2 temo (P3 temo ...) Q; Wh-temo Q; P<V-temo V-temo> Q) and appeal to particular grammatical devices (such as coordination, indeterminate pronouns, and verb reduplication) which are not part of the base TEMO construction. Though not discussed fully in this paper, each variation also has its own specific different set of additional syntactic and semantic constraints.

Functionally, these variant constructions all assert that the consequent holds true unconditionally within the relevant universe, and all of them are therefore used to emphasize the speech act that is presented in the main clause. This function is consistent with the sense of unconditionality essential to the base TEMO construction itself.

These variant constructions differ from one another in the means by which they convey exhaustiveness in the antecedent and unconditionality in the consequent — whether by appealing to binary or multiple representative alternatives all leading to the same conclusion (Alternative C.C.C.), by appealing to universal quantification as applied to some variable within the antecedent (Universal C.C.C.), or by appealing to repeated actions (or prolonged states of affairs) that turn out to have no effect on the result (Reduplicative C.C.C). By contrast, with the English EVEN IF construction and with the scalar-based use of the TEMO construction discussed earlier in Section 2, this unconditionality is derived in a very different way, by scalar entailments.

## 4. Fully fixed formulaic antecedents

**4.1.** This section will discuss **formulaic antecedents** that not only involve the formal idiomatic construction(s) discussed in the preceding section (hence incorporating the linking morpheme TEMO) but are even more fixed in their structure, with all constituent slots now filled. In the process of presenting the scalar-based type in Section 2 and the Alternative C.C.C.s in Section 3.1, I have in fact already mentioned several such cases. Here I will lay out a number of fully fixed formulaic adverbial clauses that utilize the Universal C.C.C. (and sometimes the Alternative C.C.C. as well).

There are many such fixed adverbials based on the Universal C.C.C. and marked by TEMO in Japanese. The function of all of them is to emphasize the universality of the speech act made in the main clause;[6] the corresponding nuance in English might perhaps be conveyed by such adverbials as 'by all means'. These formulaic expressions are presented and exemplified in (20) through (24) below. In each example, the formulaic adverbial is presented first, followed by a full sentence containing the adverbial.

(20) ***nani ga nan demo***
what NOM what TEMO
Lit. what is what TEMO / Lit. whatever what is

---

[6] Though these formulaic antecedents are all used for emphatic purposes, they differ in their specific use conditions in complex ways. To give just one example, *nani ga nan demo* in (20a) could be replaced by (22) *nan to ittemo*, but not by any of the other expressions.

(20a) ***nani ga nan demo*** *kenkoo daiiti desu.*
what NOM what TEMO health number one is
Lit. whatever what is, health is the number one priority.
In any situation/at any time, health is the number one priority. <letter>

(21) ***ikura nan demo***
how what TEMO
Lit. However what (it) is

(21a) ***ikura nan demo,*** *sore wa tyotto hidosugiru.*
How what TEMO, that TOP a little too terrible
Regardless, it is too terrible.

(22) ***nan to ittemo***
what QUO say TEMO
Lit. Whatever (one) says

(22a) ***nan to ittemo*** *sore wa tyotto hidosugiru.*
No matter what you say about it, it is too terrible.

(23) ***doo demo koo demo***
how TEMO this way TEMO
Lit. Whether what way or this way > by all means

(23a) ***doo demo koo demo*** *kore dake wa kansei suru.*
how TEMO this way TEMO this only TOP complete
By all means, I will complete at least this.

(24) ***doositemo***
how do TEMO
No matter how,

(24a) ***doositemo*** *kore dake wa kansei suru.*
how do TEMO this only TOP complete
No matter how (Whatever it takes), I will complete at least this.

*Nani ga nan demo* (20) literally means 'whatever what is', and is used in sentence (20a) to lay strong emphasis upon the unconditionality and universality of the statement expressed in the rest of the sentence (main clause). Likewise, in (21), by adding *ikura nan demo* (literally 'however what (it) is'), the speaker stresses the unconditional truth of the statement. *Doo demo koo demo* (literally 'whether what way or this way') in (23) is interesting in that it utilizes both the Alternative C.C.C. and the Universal C.C.C. These expressions are fixed formulas that are often listed as separate entries in Japanese dictionaries; they are called *rengo* in Japanese. Some (for example, ***doositemo*** in 24) have been lexicalized to the point that they are normally regarded as a single word.

**4.2.** In discussing scalar-based concessive conditionals in Section 2, I mentioned several phraseologically idiomatic antecedents which do not involve the Universal C.C.C. or Alternative C.C.C. Here I present another such case, one which is noteworthy because, like the other examples shown in this section, it constitutes a fixed formula that is normally listed as a separate entry in dictionaries. In addition, unlike the previous examples, it can be considered a *decoding* idiom.

(25) ***ze ga hi demo***
good NOM bad TEMO
Lit. Even if a good thing is a bad thing (??) > 'by all means'

(25a) ***ze ga hi demo,*** *kore dake wa kansei suru.*
good NOM bad TEMO, this only TOP complete
By all means I will complete at least this.

(25b) ***ze ga hi demo,*** *kore dake wa kansei sitekudanai*
good NOM bad TEMO, this only TOP complete (request)
By all means please complete at least this.

cf. (26) ***zehi*** Lit. good-bad 'by all means'

***ze ga hi demo*** in (25) literally means 'Even if the good (*ze*) were the bad (*hi*)', which makes little sense in English. It would not make sense in Japanese, either, if one lacked prior knowledge of the formulaic expression and thus needed to decompose and decode the meaning of the clause. But it in fact makes perfect sense as a fixed formulaic expression (*rengo*); it is regularly listed in dictionaries and is used very frequently in both spoken and written Japanese. This formula, by paradoxically equating polar opposites, stresses the absoluteness and unconditionality of the statement (normally an expression of intention/determination or request) in the main clause. The full formulaic antecedent *ze ga hi demo* can be shortened into *zehi* (26), which has acquired the status of a single lexical item (an adverb). The conditions for its use in some contexts, however, differ slightly from those for the longer version*ze ga hi demo.*

## 5. Conclusions

This paper has explored several formal and semantic variations of the TEMO construction. These formal idiomatic variants show clear differences, but the overall phenomenon and its variations are highly motivated by the semantics and pragmatics of concessive conditionality, as has been discussed in this paper under the rubric of 'unconditionality'. I have also presented a number of formulaic antecedents which not only utilize these formal variants of concessive conditional constructions but are even more fixed in their structure, with all constituent slots filled. Such cases show that this same property of the TEMO constructions — unconditionality — is just as pronounced functionally when occurring in fixed expressions. These expressions exhibiting varying degrees of idiomaticity, and especially the half-idiomatic and half-productive phenomena, can only be understood by accepting a continuous 'idiomaticity cline' (see Section 1) rather than treating fully fixed irregular idioms as something categorically distinct from fully productive 'regular' grammar.

The discussion in this paper has focused on idiomaticity as manifested primarily in the *antecedent* clause. Not included in this paper is another prominent type of idiomaticity phenomenon, wherein the idiomaticity is manifested in the consequent clause or in special combinatory expressions involving particular clause-linking morphemes (*inter alia* TEMO) and main-clause predicates. (This discussion can be found in Fujii 1990b and 1993.) The full range of uses of the various TEMO constructions, each bearing a different set of formal constraints and each highlighting subtly distinct yet related senses, cannot be described by a single abstract meaning or set of necessary and sufficient conditions. Only a constructional approach, with a careful examination of the idiomatic variations and syntactic and semantic relations among these variations, can do justice to the full richness of the TEMO constructions.

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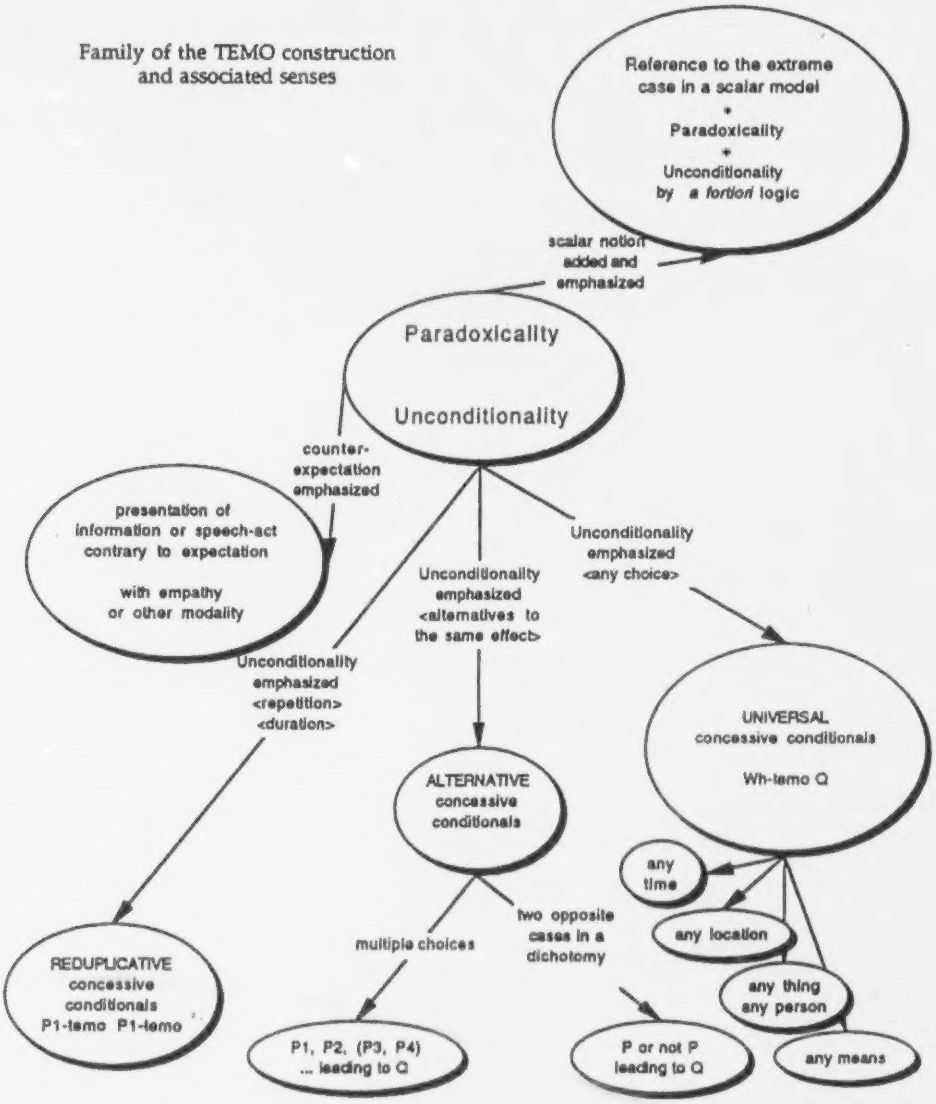
## APPENDIX I

Family of the TEMO construction
and associated senses


Reference to the extreme case in a scalar model
+
Paradoxicality
+
Unconditionality by *a fortiori* logic
scalar notion added and emphasized
Paradoxicality
Unconditionality
counter-expectation emphasized
presentation of information or speech-act contrary to expectation
with empathy or other modality
Unconditionality emphasized <repetition> <duration>
Unconditionality emphasized <alternatives to the same effect>
Unconditionality emphasized <any choice>
UNIVERSAL concessive conditionals
Wh-temo Q
ALTERNATIVE concessive conditionals
REDUPLICATIVE concessive conditionals
P1-temo P1-temo
multiple choices
two opposite cases in a dichotomy
P1, P2, (P3, P4) ... leading to Q
P or not P leading to Q
any time
any location
any thing any person
any means

[excerpt from Chapter 5, Fujii (1993)]

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# TO-INFINITIVE GROUPS AS CLAUSES AND POST-MODIFIERS IN ENGLISH:
## A Clause-Relational Semantic Analysis

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## Background and Corpus

Although the types and patterns of post-modified nominal groups in English have been well documented over the years, less attention has been paid to the meanings of the types in context. My recent work (1993) demonstrates and explains the importance of complex noun phrases in writing for mature audiences; it also shows how skilled writers use complex combinations in their work to achieve the desired levels of style, tone and emphasis. This recent work supports the earlier analysis of Johannsen (1982), who shows clear correlations between complex nominals and mature writing.

Looked at another way, complex nominals are seen (Jordan, 1994) as a major contributor to comprehension difficulties for readers who are more linguistically challenged. That work shows how we can paraphrase complex nominals into simpler clausal structures to make the writing more "readable" for members of the general public. The important differences in style, tone, emphasis and presupposition between the original and paraphrased versions are noted, and the major paraphrasing methods are documented.

Related to these analyses, other work (Jordan, 1995) explains how we can analyze the semantics of English post-modifiers using a clause-relational approach. Complex post-modified nominal groups as theme, at the end of the sentence, and embedded within complexities of the sentence are first paraphrased in terms of clausal statements, then analyzed in clause-relational terms, and finally rank-shifted as nominals and re-introduced as the analysis of the original text. Newly-introduced and complex anaphoric nominals are also discussed there.

The approach used in this last analysis - and in this present discussion - follows that of "clause relations" (e.g. Winter 1982; Hoey, 1983), while also being consistent with other related discourse systems:

the "relational propositions" of Beekman and Callow (1974), the calculus and speech notion systems of Longacre (1972, 1976), and the "rhetorical structure theory" of Mann and Thompson (1986, 1987, 1989). A detailed introduction to the field of clause relations can be found in Jordan 1992; relations are indentified by leading capitals in the discussion.

The to-infinitive clause is an important element within clause relations, usually indicating the Purpose meaning as part of the Means-Purpose clause-relational binary pair. It is also an important feature of nominal group post-modification, providing restricting and defining information with a variety of meanings ranging from Purpose and appositional Detail to indications of Hypotheticality and the broad area of Modal semantics. Thus this present paper explains, within a clause-relational background, the principal meanings of to-infinitive clauses as subordinate clauses and as restrictive post-modifiers in complex nominals.

To provide possible correlation studies between the analysis of Jordan 1993 and this work, the same article (on file with the Strathy Language Unit at Queen's University) has been used for the study. This single article is "Museums and Federal Cultural Policy", written by Michael Bell (a Governor General's (Canada) award winner for non-fiction), and published by Queen's Quarterly in the Autumn of 1987 (pp. 552-570). In the examples cited here only the page numbers are given to supplement this provenance.

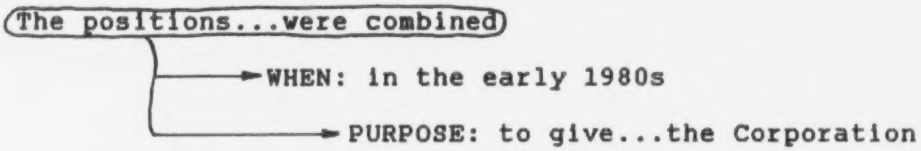
## To-Infinitive Groups in 'Means' and 'Purpose' Relations

A very common clause relation (often termed 'instrument') is called here, following Healey (1965), the relation of 'Means', as it indicates the means, method or way something is achieved. What I call the 'logical' relations (cause-effect, basis-assessment, purpose-means) often occur as binary pairs between clauses of a sentence, between sentences, or between other grammatical units which need not be on the same strata. Here is a simple example showing the Means-Purpose relation between two clauses. In this and later examples the start of the to-infinitive clause is underlined to facilitate recognition.

(1) The positions of the Vice-Chairman and the Secretary-General were combined in the early 1980s to give the Secretary-General some clout in dealing with the directors of the national museums

> who are appointed by Order-in-Council and not the Board of Trustees of the Corporation. (P 563)

The clause relation can be shown diagrammatically as:


The positions...were combined
WHEN: in the early 1980s
PURPOSE: to give...the Corporation

In this sentence, the main clause is the Means and the subordinate clause is the Purpose. Typical Means subordinate clauses are indicated by by...ing, through...ing, by means of, etc. Winter (1977) explains how such lexical items as Means and Purpose (and their synonyms) signal these relations between sentences and between clauses of different sentences.

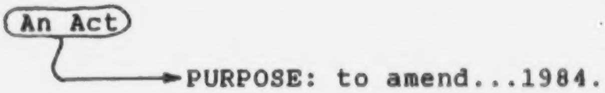
The Means and Purpose relations often occur as binary pairs in this way. While, however, it is difficult to envisage how we might have a Means clause without a corresponding Purpose, the opposite is quite common. That is, the Purpose is stated, and the Means of achieving it is either obvious or derivable in the context - or is perhaps not known. Here we will be concentrating on such single Purpose relations, first as they occur as clauses and then as embedded or rank-shifted clauses within the post-modifications of complex nominal groups (noun phrases).

### Nominal and Clausal Referents for Purpose Clauses

When we have a to-infinitive subordinate Purpose clause in a sentence, we must be able to determine the first part of the binary relation with which it is connected, i.e. its referent or antecedent. In Example 1, the referent for the Purpose clause is the main clause of the sentence, thus creating a clause relation between the two clauses. At the opposite extreme, however, a nominal group is clearly the referent in:

(2) Three bills, C-27 (Crown Corporations Act 1979), C-123 (Government Organization Act 1982) and C-24 (An Act to amend the Financial Administration Act in relation to Crown Corporations 1984) have successfully been proposed. (P558)

The Purpose clause (to amend...1984) in this example is a restrictive post modifier to the nominal An Act, which is the referent for that clause, i.e.

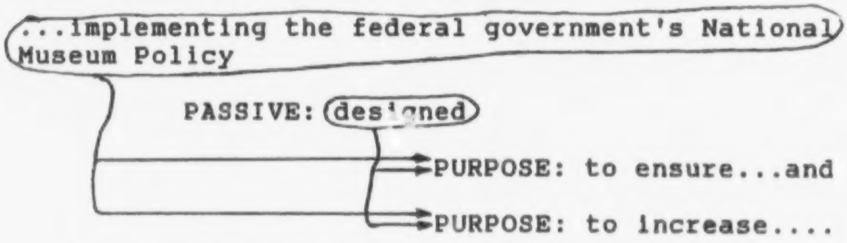


Thus the complex nominal group An Act...1984 contains a purpose clause within it, and can be seen as the existential rank-shifted clause: "There is An Act whose purpose is to amend the Financial Administrations Act in relation to Crown Corporations, and which was passed in 1984."

Because individual people and groups of people (committees, corporations, etc.) can have purposes, and things (such as acts or guidelines) created by people can also have purposes, we find many examples where the Purpose relation occurs on its own (without its Means counterpart) with a person or thing as its referent. And because Purpose clauses can be attached either to a preceding clause or a preceding nominal group, writers have to be careful in signalling which is intended. This is seen in:

(3) In 1972, the Corporation was given the responsibility of implementing the federal government's National Museum Policy designed to ensure the preservation of Canadian museum collections and to increase public access to them. (P353)

Are the two parallel to-infinitive Purpose clauses attached clause-relationally to the whole of the main clause (giving Purposes for giving the responsibility to the Corporation), or are they attached nominally, indicating that the National Museum Policy has these aims? The key to understanding that the latter is the correct interpretation is in the verb form designed, which embeds the two Purpose clauses within the (probably non-restrictive) -ed clause, post-modifying the head of the nominal group:



Thus the Purpose clauses give the purpose or reason for the policy, not the purpose for giving the responsibility. Without the agentless passive designed, the two Purpose clauses would have given purposes for the giving of the responsibility:

the Corporation was given the responsibility...Museum Policy

→WHEN: In 1972,

→PURPOSE: to ensure...and

→PURPOSE: to increase....

## Meanings in Post-Modifying Nominal Groups and Clauses

A Purpose clause post-modifying a nominal group causes no semantic difficulties in thematic position as seen in the following example, which uses a deverbal noun as head:

(4) Renovations for the Victoria Building to improve the housing for the National Museum of Natural Science hover in the background...(P567/568)

Such examples - and more-complex ones in other positions in the sentence - have been analyzed first as passive agentless existentials with added Purpose clauses, and then by rank-shifting them into nominal form (Jordan, 1995):

Renovations have been made for the Victoria Building

→PURPOSE: to improve the housing ....

[=Renovations for the Victoria Building to improve the housing...].

The meaning changes slightly when people are involved, as the meaning of a to-infinitive clause can become closer to indicating the responsibility of a person. We see this in:

(5) Not only have the collections been poorly housed, but there has been a severe shortage of trained staff to establish physical and intellectual control of the collections. (P566)

We can determine the semantics involved here by inserting the words "whose job it is" before the to-infinitive clause. Modal concepts such as "authority", "responsibility" and "mandate" seem just as suitable as "purpose" here, and these are discussed in more detail later.

Other meanings of to-infinitive clauses can be detected in:

(6) The principal recommendation of the National Museum Task Force is the repeal of the National Museums Act of 1968, and the dismantling of The Corporation to be followed by new legislation to establish each of the four major federal museums as administratively autonomous, free-standing institutions. This is to be preceded by an immediate initiative to devolve authority, responsibility and accountability for the four federal museums to the directors of those museums. (P566)

In the first instance of a to-infinitive group, purpose is a reasonable meaning to construe, but we could paraphrase to establish with a non-restrictive relative clause (, which will establish...), giving Details about the new legislation. In the second to-infinitive clause, again details are given rather than actual purpose. That is, the clause is saying what the initiative is rather than would it is designed to do.

Appositional semantics of Detail occur in clause-relationally connected clauses as well as with nominal group post-modifications. This is seen in:

(7) On 21 May 1987 the Minister of Communications, Flora MacDonald, reported to Parliament that the government was going to act upon the recommendations of the National Museums Task Force to establish four separate national museums and do away with the corporate organizations designed in the late 1960s, and to place the granting programmes which serve museums and galleries throughout the Canadian Department of Communications as part of an Omnibus Museum Support Programme. (P567)

This is what the recommendations are, not what they are intended to achieve, and so we must take the meanings of the two parallel clauses as appositional providing Detail, and not Purpose.

## Closed System Signals for Purpose and Other Semantics

Winter (1977) shows how words that tell us what the relationship is between binary elements of text are used as important signals of the relationships. He discusses the predictive and cohesive power of "Vocabulary 3" items - compared with the subordinators ("Vocabulary 1) and sentence connectors ("Vocabulary 2") - such as *comparison*, *consequence*, *hypothetical*, *reason*, *time*, and *way* as signals of the relations between parts of text. We can extend this understanding to include as "Vocabulary 3" items other closed sets of relationship-indicating words used as heads of to-infinitive clauses.

To show compatibility with Winter's analysis, we have below an example in which the item *way* is used as head of the to-infinitive clause to indicate the concept of Means:

(8) ...but one can imagine that members of the cabinet look upon those hundreds of millions of committed dollars with little enthusiasm as they seek *ways to reduce* spending in their departments *to meet* the Minister of Finance's fiscal goals. (P568)

What they are seeking are Means of reducing the spending, which in turn is the Means of meeting the goals:

...as they seek ways
→PURPOSE: to reduce spending...
→PURPOSE: to meet...goals.

An interesting closed set of words is used as heads of to-infinitive clauses to indicate many other relations. Some examples are *recommendation*, *suggestion*, and *idea*, which indicate futuristic, non-definite concepts akin to the "Hypothetical" semantics noted by Winter. These and others are words that act as to-infinitive harbingers like the "Vocabulary 3" words of Winter's analysis. Here is an example:

(9) New solutions for the funding of the arts in Canada seem to have been a priority of the Mulroney government. This is demonstrated most noticeably by the appointment of the small Task Force on the Funding of the Arts in Canada *to make recommendations to improve* the fiscal climate for the Arts in Canada. (567)

The whole of the second sentence provides Basis, or support, for the first sentence. Within the second sentence, we learn of the Means of the Basis (the way we can prove the initial Assessment is valid) as the nominal group headed by the de-verbal noun appointment. This nominal group is the referent for the first Purpose to-infinitive clause, which contains the closed-set item recommendations as referent for the second Purpose clause:

New solutions...of the Mulroney government.
This is demonstrated
BASIS: MEANS: by the appointment of...Arts in Canada
PURPOSE: to make recommendations
PURPOSE: to improve...in Canada.

The semantics of doubt or hypotheticality are signalled by such words as opportunity, chance, intention, potential and tendency. Two examples are seen in:

(10) As a result the public programmes were built upon the weakest foundations with the potential to collapse at any time. The tendency to fund projects to the institution was limited. (P564)

The items potential and tendency act as heads to their respective to-infinitive clauses and indicate a measure of doubt or uncertainty.

## Modal Semantics and the Catenative Verbs

Related to the principle of signalling Purpose and Hypothetical semantics, we can recognize a wide range of relations (identified as "Modal Semantics" and defined in Jordan, 1978, P151) signalled by closed set items acting as heads of to-infinitive post-modifiers. Examples are authority, capability, ability, willingness, need, desire, requirement, determination, and permission. The "Authority" relation occurs twice in:

(11) Bill C-27 would have provided the Governor-in-Council with the power to direct any crown corporation as "is necessary or desirable for the better advancement of the national interests of Canada" but it never passed.

The Liberals persisted with Bill C-24, which would provide the government, through the Treasury Board, with the power to give binding directions to any crown corporation on any matter. (P558)

The start of this example could be paraphrased as "Bill C-27 would have authorized the Governor-in-Council to direct...". This shows the close relationship between the catenatives (Palmer 1974, 166-211) and the modal semantics signalled by the set of closed noun heads of to-infinitive post-modifiers. Both methods of signalling occur in the following example:

(12) Following two years of planning and discussion the National Museum Policy was announced in 1972 and the National Museums of Canada was given the responsibility to administer the programmes of grants and services for museums throughout Canada. The National Museum Policy was intended, the Secretary of State, Gerard Peletier, suggested, to help one to "erase the traditional notion of stagnancy that comes to mind when one hears the word 'museum', and instead try to envisage a modern and dynamic instrument of initiation to culture." (P556)

This time the modal semantics of "Authority" is signalled by the noun responsibility as head of the post-modified to-infinitive clause, and hypotheticality is indicated by the passive catenative was intended. The catentive to help one to erase and the two-stage catenative to help one to try to envisage are used.

## Summary

The to-infinitive clause in English, while often signalling Purpose, may instead indicate other relations providing appositional Detail information about the preceding clause or the nominal group head it is modifying. It occurs freely as the second part of the Means-Purpose binary pair, or to provide Purpose or Detail information as a post modifier of a nominal group.

Paralleling Winter's "Vocabulary 3" items, which tell us what the relationship actually is, we find similar - often deverbal - noun heads of nominal groups post-modified by to-infinitive clauses. These heads indicate relations providing suggestions and hypotheticality. Other noun heads signal the modal relations, and these have deverbal catenative counterparts, which allow us to recognize different surface patterns corresponding to these important semantic notions - as shown by Hornby (1976).

This analysis is consistent with other work in clause relations and nominal group semantics, extending our understanding in both areas.

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# MEANING IN LANGUAGE AND MEANING IN MUSIC

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> "...the human world has roots in deeper layers which occasionally send signals to us — not least recognizable at the aesthetic level of musical experience."
>
> Nils Wallin, Biomusicology (1991), p. 27.

It has often been observed, by both semioticians and casual observers, that music has many resemblances to language. On the other hand, it is sometimes said that music conveys no meaning or that music refers to nothing outside itself — in which case music would be quite unlike language with respect to its relationship to meaning. This paper compares and contrasts language and music with respect to both expression and meaning, and attempts a possible explanation of the observation that "Language speaks to the mind, but music speaks to the heart".

On the one hand, we find that both vocal music and spoken language, perhaps the original forms of music and language respectively, both use the same organs of production and reception, and that there are great similarities in their elements of expression. On the other hand, it is clear at least that music lacks the power language has of providing different expressions for thousands of objects and processes of human experience, distinguishing them from one another with great precision.

Theories on meaning in music, like most linguistic theories of meaning, have been limited by their failure to take sufficient account of the cognitive systems of the people involved. This paper proposes that adopting a cognitive point of view and also looking into neurological structures associated with language and music can help to explain their differences with respect to the kinds of meanings they express.

As our starting point for this preliminary exploration, we accept the usual assumption that language has meaning, and we ask, what about music? Various people have stated various opinions. Stravinsky is reported to have said that while language refers to things in the world, music refers only to itself. From the fact that the same tune has often been used with different words — for example *Greensleeves* and *What Child*

*Is This*, some have concluded that music conveys no meaning at all in itself, so that words of any song could go with any music (rhythmic patterns permitting). Others attach detailed meaningful descriptions to musical texts. Many opinions have been stated over the years, but we needn't go into them. Rather, it would appear to be more fruitful to formulate some idea of what meaning is.

**Question: What is meaning?** Many attempts have been made to define meaning, but most have not been very successful. I would like to propose that the only way to get a meaningful answer to this question is to adopt a cognitive approach. Let us proceed by proposing some **basic principles for a cognitive approach to meaning**:

**Principle 1. Meaning is the cognitive effect of expression; that is, the effect of expression on the minds of those who receive it.** From this principle follow two others:

**Principle 2. You can't have meaning without expression.** Reason: The cognitive effect has to be the cognitive effect of something.

**Principle 3. You can't have differences of meaning without differences of expression.**

Out next step is now clear: We need to look at what types of diversity we find in linguistic expression and in musical expression.

It will doubtless be generally agreed that we find the following **types of diversity of expression in spoken language:**

Generally considered primary:
    Consonant and Vowel distinctions.
Also important:
    Accent (pitch, stress, duration)
    Tone (for some languages), Intonation
    Length of vowels, consonants (some languages)
Generally considered secondary:
    Volume, Speed, etc. ("paralinguistic" features)

Obviously, speech provides us with great precision, the ability to distinguish tens of thousands of different concepts for different things, relationships, etc. (For written language, appropriate adjustments may be made in the list above.)

Music seems at first glance, and in the observations of many, to have at best much less meaning than language. Is this because music has less means of making distinctions of expression? Let us take a look. Casual observation gives us the following list of
**properties of music expression which provide for making distinctions:**

1 - Pitch (and relative pitch)
2 - Rhythm
3 - Tempo, including tempo dynamics (accelerando,etc.)
4 - Volume, including volume dynamics (crescendo, etc.)
5 - Tonal qualities (provided by harmonics)
6 - Intervals
7 - Duration --- Variable lengths of notes
8 - Harmony --- chords, chord progressions, chord placements
9 - Articulation --- attacks, continuity, etc.
10 - Key and Mode (major, minor, types of minor)
11 - Interplay of multiple voices/instruments

We get still further possibilities from combinations of the above. For example, from sequences of intervals with variable lengths of notes we get melody (to which we add harmony, to which we add various kinds of dynamics).

It is thus evident that music too has enormously rich variability of properties of expression, enough to provide possibilities for great precision. Nevertheless, these properties, rich as they are in their discriminatory potential, are evidently not used for making the kinds of distinctions found in language --- for example, we do not get different musical expressions for identifying different objects. The rare exceptions, as in Prokofiev's *Peter and the Wolf*, are notable in their rarity and in their severe limitations in comparison to language.

We may also observe that these properties of diversity in music are mostly **scalar**, lacking discrete boundaries, while those most considered most important in linguistic expression --- the consonants and vowels --- are distinguished on a contrastive all or nothing basis. For example, considering the contrast *b:p* in English, as in *bear* and *pear*, a phonation [per] with unaspirated initial [p] --- that is, a consonantal sound intermediate between *b* and *p* --- does not denote a cross between a bear and a pear (a pear with a fur coat that like to eat honey?, a bear that has seeds inside and grows on a tree?) This observation holds also for vowels, although the phonetic domain is clearly scalar. Less obvious but also true is that the phonetic domain for consonants is likewise scalar, as was pointed out for example by Hjelmslev (1943/61).

In the case of language, we are talking about a type of information processing which may be characterized as digital or analytical, or as categorial, often (but not always) with binary categories but with the tendency to treat categories as strictly bounded, so that a given thing is either in or out. This type of information processing, very important for language, may be called DIGITAL.

We may contrast digital processing with another type associated particularly with various media of artistry, including music. Following Joos (1950) and others, we may called the latter ANALOG. Some contrasting concepts which are correlated (in some cases roughly) are:

| DIGITAL | ANALOG |
|---|---|
| Discrete | Graded |
| Analytical | Holistic |
| Methodical | Intuitive |
| "Left Brain" | "Right Brain" |

The last of these pairs is only very roughly correlated and it may even be misleading to include this one, even though these terms are very often used nowadays in this oversimplified way. To this set we may add, I propose:

| | |
|---|---|
| Linguistic | Musical |

Of course, music does have its digital features, but they play a less important role than those of language. And we do find analog processing in language — especially in *language* as that term is usually understood! — but not as much as in music. Before proceeding we should observe that in the list above of properties which provide diversity of expression in language, only the first category — consonant and vowel distinctions — is primarily of the digital kind; the other two are mainly analog. And they do indeed provide richness of expression, very much like that of music. We may well ask why the prosodic features and the "paralinguistic features" are generally treated (and not just by linguists) as less important. There are three likely answers, and we don't have to choose among them, as all are probably correct: First, since scholars like to be analytical, they have been inclined to pay more attention to digitally distinguished features than to the analog. Second, it is the digitally distinguished features which are regularly represented in writing, and writing has had a great influence on our perceptions of what language is. Third, the digital properties have been taken as more important precisely because they are the ones which give language its important referential function, as explained below.

Now, digital processing is involved in much more that distinguishing among consonants and vowels and among lexemes. It seems also to be very important at the conceptual levels of our cognitive systems; but here there may be great variation among different cultures and among different subcultures and persons within a culture. Thus some linguists and philosophers have been heavily predisposed to digital thinking — that is, to digital processing in their conceptual systems — so that they indulge frequently in certain "Thinking disorders of everyday life" and "Thinking disorders of scholarly life" (Lamb 1994). These digital disorders include *either-or thinking* (Lamb 1991), *the single cause fallacy*, *the single analysis fallacy*, and *thinking in categories*.

Now these phenomena involving digital thinking don't just happen by some kind of historical accident or by some mysterious magic, nor is it just by chance that they are closely associated with language. Rather, we may identify two reasons why our minds work this way (and the two are of course related):

First, it is functionally necessary for certain types of systems — in particular the phonological and lexical systems — if we are to use expressions (spoken or written) to distinguish and identify potentially millions of different objects and phenomena. For example, the distinction between *bear* and *pear* must be treated as a sharp one, even if it is not a sharp one in terms of articulation.

Second, the difference between these two kinds of processing must be correlated — and in fact must be supported by — two different kinds of neurological structures.

The relationship between these two factors, we may hypothesize, is as follows: The supporting neurological structure had to develop during the course of evolution of the brain in order to enable it to perform according to the demands of the first factor (the functional demands). That is, the supporting contrast-enhancing structure evolved in order to support digital processing for mental functions which could be enhanced by such processing.

A primary neurological means of handling enhancement of contrast is lateral inhibition, shown in a simplified form in Figure 1. In lateral inhibition, each of a competing set of possibilities (for example, *b* and *p*) inhibits its competitor(s) when it is activated. Such contrast-enhancing structure is needed to counteract the normal tendency of neurons to

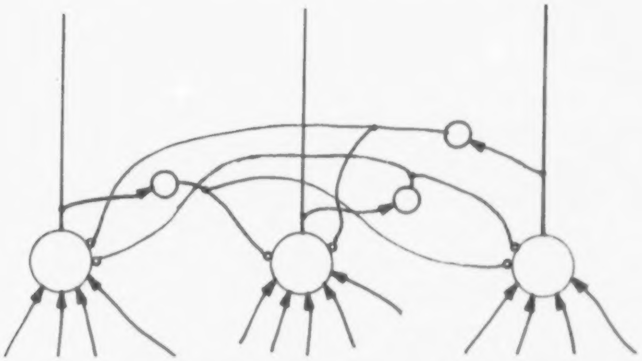

Figure 1. Schematic representation of lateral inhibition. (After Konorski 1967.) Excitatory connections are shown as arrowheads, inhibitory connections as tiny circles.

behave in an analog manner --- that is, a given neuron tends to send varying amounts of activation along its output lines as a function of the amount of activation being received by it. If lateral inhibition structure is added, when one of a set of contrastive nodes in activated, it not only sends activation up to the next level of integration, it also inhibits activation of its competitors. This type of neurological structure has been found in studies of the neural basis of visual perception, where heightening of contrast also plays a large role, as in the perception of edges; and we may hypothesize that it also underlies much of linguistic and conceptual information processing.

Since digital thinking is characteristic of some of our mental processing but not of all of it, it follows that this type of neurological structure is present or predominant only in some parts of the cortex but not all. We may hypothesize that those cortical areas which have less of the contrast-enhancing structures are those which support analog or holistic thinking. In this connection it may be appropriate to observe that over eighty years ago, at a time when little was known about the functions of different areas of the cortex, Korbinian Brodmann (1909) divided the cortex into fifty-two different cytoarchitectonic areas on the basis of their differential populations of neuron types and differences in their arrangement into layers. It seems to make sense that different structures would be adapted to different functions --- and as the neural sciences have advanced, specific functional areas have been located, and these functionally defined areas can often be identified with Brodmann's architectonic areas.

A further relevant property of cortical architecture, again related to function, is as follows: The lexical area or areas — lexical production and lexical recognition may be two different (though surely interconnected) areas — are of necessity interconnected with the cortical areas we need for (1) cross-modal correlation and (2) conceptual relationships (the latter, as it must be very complex, may involve several areas). Cross-modal correlation is the integration of the results of processing of different perceptual modalities, such as visual, tactile, and auditory; it is essential for the referential function of language. For example, if we see a cat, feel its fur with our hand, and hear it *meow* while also seeing its mouth open, our cross-modal correlation center tells us that this is one cat, not three, even though the information about it is coming from three different places (eyes, ears, hand). For the cognitive study of meaning it is especially important that the cross-modal correlation function be closely connected with linguistic areas. In this connection, Geschwind has proposed that the angular gyrus, which is near Wernicke's area, combines auditory input with input from other senses (cf. Geschwind 1964, 1979).

But perhaps, in contrast to the linguistic, the music processing areas are relatively lacking in connections to cross-modal correlation. This would be the underlying basis, from the point of view of brain structure, for the fact that music can have at best very limited referential use — why pieces like *Peter and the Wolf* are so unusual and so limited.

But, on the other hand, the music processing areas of the cortex are evidently heavily connected to the limbic system (Wallin 1991). The limbic system is described by Geschwind (1964) as follows (p. 157):

> "Lying along the inner surface of the temporal lobes of the brain are a group of structures of extremely complex anatomy. For the sake of simplicity I will loosely use the term 'limbic system' to refer to these and to their major connections in the **hypothalamus** and other structures lower in the brain. Included in the anatomical organization of this region are those parts of the brain which when stimulated give rise to sensations of taste or smell, and to certain emotions such as fear and their corresponding motor activities. For simplicity we may divide those aspects of the limbic system of interest to us into two groups: (1) **Limbic motor responses** — these are highly organized, essentially inborn motor sequences which mediate the motor responses involved in fear, rage, and sexual activities. (2) **Limbic sensory responses** — these are the subjective feelings of smell, taste, hunger and thirst and the corresponding feelings of satiation, sexual sensations, anger, and fear. It is not at all inaccurate to say that the limbic system mediates both the inborn motor sequences involved in those elementary activities intimately related to the survival of the

> organism or the species and the subjective experiences related to these activities."

We might propose, admittedly at the risk of oversimplification, that the meaning of music is registered mainly in the limbic system while the meaning of language is registered mainly in the angular gyrus and adjacent areas dedicated to conceptual processing.

**Summary and Conclusions.** It would appear that language is inherently more digital than music. We can identify three factors related to this observation: (1) Digital processing is necessary for the referential function of language, which allows it to provide distinct lexical expressions for tens of thousands of things, processes, relationships, qualities, etc. (2) The lexical area(s) of our brains are heavily connected to the cross-modal-correlation area(s), while the music areas are relatively lacking in such connections. (3) The cortical areas which support language processing, in particular the phonological and lexical areas, have structures which provide for enhancement of contrast, including (but perhaps not limited to) lateral inhibition.

Finally while music lacks the referential abilities of language, it seems to have an emotional power greater than language, and this property may be explained by heavy connectivity of musical perception centers to the limbic system. Why do people tend to enjoy songs more than speeches? And why are songs often more persuasive than speeches? The folk-singer Tom Paxton has said (personal communication) that the civil rights movement in the American South during the sixties could not have been as successful as it was without the songs that were sung by those involved in it.* In the song, we combine linguistic and musical expression, and we thus enrich the activity going on in the brain of the hearer, since both the intricate conceptual-analytical processing supported by the angular gyrus (and other structures) and the activity of the limbic system are involved, in parallel. Also, these parallel cognitive activities are multiplied when multiple people are listening to songs together, even more when they are singing together, enhancing not just their individual cognitive activity but also the strength of their feelings of interrelatedness.

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*I chanced to be in Hong Kong during the days preceding the Tiannanmen Square massacre, during which time students and supporters were rallying for democracy in Tiananmen Square. Rallies were also being held in Hong Kong, and on Sunday there was a huge rally and march starting in the heart of downtown Hong Kong. The many thousands of people thronging the streets were singing "We Shall Overcome". In English.

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# RENAMING THE BALTIMORE ORIOLE: ANOTHER KIND OF "CORRECTNESS"

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In May of 1988 I drove from Vestal, New York, to Point Pelee National Park at the southern tip of Ontario, in order to observe the climax of the spring migration of birds from the tropics. The narrow peninsula, reaching for miles into Lake Erie, attracts a concentration of small land-birds from a large part of Ohio, as they take the shortest flight over water. When I arrived and began to walk around, the first great experience was to be in the midst of dozens of Baltimore orioles; all the males were singing. I had been used to seeing them at home, but not more than two or three at a time. After the trip I wrote up the highlights for the newsletter of the Naturalists' Club of Broome County. The editor found it necessary to redo my memoir on her typewriter; and I noticed that where I had written "Baltimore", she had first copied it but then erased it and instead typed in the slightly shorter word "Northern". I did not make an issue of the change; but it lingered in my memory and rankled.

Eventually I thought through the linguistic implications of her correction. As she looked at it, "Baltimore orioles" was a mistake, which a careful editor must by all means correct before it went any further. Not that I was wrong as to which kind of oriole I had seen, but that I ought not to have called it the "Baltimore oriole", because that name has been dropped in favor of "northern oriole". Dropped by whom? The authoritative, scientific observers.

I was already aware of recent books in which it is the "northern oriole", and I understood pretty well the rule, or principle, that lay behind the change: Formerly, when the oriole I was talking about was ranked as a distinct species, *Icterus galbula,* it was entitled to be known in English as the "Baltimore oriole", distinguishing it from all other orioles. But it has since been demoted to a subspecies; and so has its counterpart in the western states and the adjacent parts of Canada and Mexico, which used to have the scientific name *Icterus bullockii* — i.e., "Bullock's oriole" — but is now officially *Icterus galbula bullockii.*

The reason for demoting the two erstwhile species to subspecies is that they are judged not to be distinct enough; for they hybridize in the central region, from southern Saskatchewan to northern Texas, where their breeding ranges overlap. And so a new name was thought up to replace "Baltimore oriole" and "Bullock's oriole". The choice was adequate, if not brilliant: "northern oriole" does differentiate this bird from the orchard oriole, which just barely reaches into Canada, and all the other species of orioles are strictly tropical or subtropical. To me, however, as an English speaker and writer, all this is not reason enough to give up the familiar and highly meaningful designation "Baltimore oriole".

I would like to understand the thinking of the authorities on ornithology, though my linguistic point of view disagrees with theirs. The American Ornithologists' Union published its first *Check-list of North American Birds* in 1886; the subsequent editions date from 1895, 1910, 1931, 1957, and 1983, incorporating great changes in classification and, accordingly, in nomenclature too. The most pervasive and lasting concern, throughout the hundred years, has been to define and refine the species. As more and more subspecies were described, the ornithologists coined a third Latin name for each of them — such as *Turdus migratorius nigrideus* for the subspecies of robin that breeds in northeastern Canada and is on the average darker than the robins found over most of the continent; but eventually they stopped giving an English name to every subspecies. For such differences are not, on the whole, plainly visible during field observations; for them to show up, many specimens have to be studied and measured close at hand. Furthermore it appears that the birds themselves pay little or no heed to those fine differences; along the border between the territories of any two subspecies, they freely mate with each other.

In the fifth edition (1957) the American Ornithologists' Union decided to dispense altogether with the English names that had previously been given to subspecies. At that point nothing of value seemed to be lost by dropping such names as "southern robin" for *Turdus migratorius achrusterus* of the southeastern states and "western robin" for *Turdus migratorius propinquus.* For ordinary purposes of discourse all of these are just robins. But a scientific theory requires a more objective justification: species differ from one another **genetically,** in some way that subspecies do not; and so the essential criterion for a species becomes its "reproductive isolation",[1] or incapacity to interbreed successfully with a related species.

The interbreeding of Baltimore and Bullock's orioles was reported as early as 1905;[2] and the fifth edition of the *Check-list* (p. 534) noted that they hybridize extensively "in western Oklahoma and western Nebraska". But only in 1973, when the thirty-second supplement to the *Check-list* came out, did the American Ornithologists' Union face the need for a new name:

> *Icterus bullockii* is considered conspecific with *Icterus galbula;* the latter becomes the species name to be included as the binomen of all component subspecies. The English name for the enlarged *Icterus galbula* becomes Northern Oriole; "Baltimore Oriole" and "Bullock's Oriole" remain available for the *galbula* and *bullockii* subspecies groups, respectively. . . .[3]

*Northern Oriole* was soon adopted by the contributors to *The Auk,* the quarterly publication of the A.O.U.[4] The supplement explicitly authorized the retention of the old names, saying that they **remain available;** but by putting quotation marks around "Baltimore Oriole" and "Bullock's Oriole", it implies somehow that these designations are no better than makeshifts — the so-called Baltimore and Bullock's orioles — whereas the new name is the true one, corresponding unequivocally to the facts of science.

However, the sixth edition of the *Check-list* in 1983, while listing only the species "**Icterus galbula** (Linnaeus). NORTHERN ORIOLE" (p. 737), acknowledges that a difference of opinion remains, whether to set up one species or more than one.[5] This edition also brings in, and to some extent develops, the new concept of the **superspecies** (pp. xiv-xv), which could seemingly have been applied to these orioles just as well as it is actually applied there to the hybridizing sapsuckers of the woodpecker family. Then the Baltimore oriole and Bullock's oriole would count as two species comprising a superspecies, and there would be no need to reject the familiar English names for them.

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[1] *Check-list,* 6th ed. (1983), pp. xiii-xiv. This edition departs greatly from its predecessors: The area is now expanded south all the way to Panama, and takes in the West Indies and the Hawaiian Islands; previously it had covered nothing south of the border between the United States and Mexico, except for Lower California. On the other hand, to make room for hundreds of additional southern species in the book, subspecies are not listed as they were in the previous editions; in most cases it is not even mentioned whether a species is divided into subspecies.

[2] A. C. Bent, "Summer Birds of Southwestern Saskatchewan," *The Auk,* 25 (1908), 29.

[3] Ibid. 90.417.

[4] The annual index to *The Auk* changed from "Oriole, Baltimore" and "Oriole, Bullock's" in 1973 to "Oriole, Northern" in 1974, but some articles in the latter year still used the old terminology.

[5] "The three groups have often been regarded as separate species, *I. galbula* [BALTIMORE ORIOLE, 507], *I. bullockii* (Swainson, 1827) [BULLOCK'S ORIOLE, 508], and *I. abeillei* (Lesson, 1839)

The title page of each edition states the motto, "Zoölogical nomenclature is a means, not an end, to Zoölogical Science." No doubt the scientific ornithologists perceive, more clearly than ever, that the natural phenomena are very complex, and that the actual gradations do not fall neatly into a dichotomy — either separate species, or else mere subspecies of the same species. The fine print in the latest edition (reproduced by the fine print of my footnote) reveals that they are not unanimous in their classification of the orioles; but still, for the purpose of publishing a *Check-list,* the prevailing view holds sway. And so, at least for the time being, their rule in regard to English names militates against "the Baltimore oriole" and "Bullock's oriole"; it pushes for only "the northern oriole".

But why should their authority bind the editor of our local newsletter — and many other people — who have been talking about *Baltimore orioles* year after year, as far back as we can remember? Is this somehow on a par with the convention of changing a woman's name upon marriage? Emma Woodhouse, in Jane Austen's novel, gently admonishes her father that they must no longer speak of her former governess as "Miss Taylor", since she has become "Mrs. Weston". Mr. Woodhouse was an old man clinging to an old habit; but to us the orioles are **the same birds as they always were,** regardless of any intermarriages with Bullock's oriole way out there on the Great Plains.

Above all, the two kinds of orioles are strikingly different in their looks. The males of both kinds, to be sure, are gorgeously orange and black, but the pattern matches only in part; for Bullock's oriole has more orange, extending beyond the breast to the sides of the head and even to the crown, whereas the head of the male Baltimore is all black, and the white bar on the wings is much wider in Bullock's Oriole. The startling difference in plumage not only registers upon any bird-lover;[6] it should also arouse the curiosity of a scientific observer and direct his research toward the ritual of courtship: Where the breeding ranges overlap, does a male Bullock's oriole with his gaudier feathers attract a female Baltimore oriole more successfully than the converse — a male Baltimore displaying before a female Bullock's?[7]

The question bears, furthermore, upon theories of evolution; it suggests that Bullock's oriole developed as a successful offshoot, because in the separate envi-

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[ABEILLE'S or BLACK-BACKED ORIOLE], although the former two intergrade in the southern Great Plains, and the latter two in northern Durango; two species are sometimes recognized, with *galbula* as one species and *abeillei* merged with *bullockii* constituting the other" (p. 738; the brackets are theirs). *Icterus abeillei,* or (as now designated) *Icterus galbula abeillei,* not occurring north of the border between Mexico and the U.S., was not mentioned in the previous editions (see above, note 1).

[6] For other, less prominent features, see G. M. Sutton, "Oddly Plumaged Orioles from Western Oklahoma," *The Auk,* 55 (1938), 2.

[7] The dull-colored females differ also, but only in minor shadings. It may be safe to assume that a male of either kind would court a female Baltimore or a female Bullock's impartially. See C G. Sibley and L. L. Short, "Hybridization in the Orioles of the Great Plains," *The Condor,* 66 (1964), 130-150; they based their study, however, on 623 collected species, rather than on observation of live behavior. Their article was most influential in convincing the A.O.U. that the Baltimore and Bullock's orioles belong to the same species.

ronment of the West, with its open woodlands, the more vivid pattern prevailed. In any case, it was only after the grassy plains, between the East and the West, were settled by white people and trees grew up around their farmhouses and villages, that both kinds of orioles in that region increased in number so much that their interbreeding has become frequent and easily noticeable.

Given the biological and geographical facts, the English language obviously needs distinct expressions for the two things being talked about. It will not do to lump them together as "the northern oriole". No doubt a scientist, while writing in English about birds of North America, can resort to the clumsy Latin name *Icterus galbula galbula* or its abbreviation *I. g. galbula* instead of "Baltimore oriole", and *Icterus galbula bullockii* or *I. g. bullockii* instead of "Bullock's oriole".[8] But it defies common sense to hold that the previously established English words for identifying these birds have become incorrect — just because an authoritative scientific body has revised its classification of them and now considers them subspecies rather than separate species. Other users of the language would be wise to consider "northern oriole" as a recommendation, but then to reject it.

The change in terminology reminds me of the feminists' attempt to replace *Mrs.* and *Miss* with *Ms.* (pronounced [mɪ:z], which had been the Southern regional pronunciation of *Mrs.).*[9] Wherever their movement has gained ground, it has become "politically incorrect" to keep up the traditional usage; for the shift from *Miss X* to *Mrs. Y* has been symbolizing a great change in the woman, whereas *Mr. Y* remains the same after marriage as before. The feminists hate this part of the English heritage as "patriarchal", just as they are opposed to marriage itself unless there is perfect reciprocity in every respect.

The new-fangled *Ms.* succeeds in not informing strangers whether she is (or has ever been) married, as though such a fact about her were none of their business; if they see her in person, they can of course look at her ring finger and draw their own conclusion. Yet it is no more than a mere gesture against patrilinear family names. It purposely hides the fact that she got her surname from her father, or else that she got it from her husband; or even if she got it from her mother, then it came in turn from her maternal grandfather, not a female ancestor. *Mr. Y,* on the other hand, is of course presumed to have gotten his surname from his father, certainly not from his wife if he has one. Nothing that is now on the horizon will radically alter this system of hereditary surnames, so as to put men and women indeed on a par.

The feminists have attacked such ordinary, familiar English usages because they resent the **culture** that is thereby expressed. The ornithologists, on the other hand, who want to change from *Baltimore* or *Bullock's oriole* to *northern oriole,* are merely indifferent to the cultural heritage maintained through language. But they must be resisted by those of us who see the value of that heritage from the past and will not lightly give it up. The name *Bullock's oriole* perpetuates the memory of a worthy, if minor naturalist. The name *Baltimore oriole* is much richer than that. In a unique way it resonates with the glorious foundation of one of the English colonies in North America.

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[8] The nomenclature for subspecies requires that *galbula* be used in this fashion, because *galbula* was described earlier than *bullockii* (1758 and 1827 respectively).

[9] By dissimilatory suppression of the first sibilant in [mɪsəz].

The "Baltimore bird" is documented as early as 1669, decades before the robin in America.[10] It was one of the first of the smaller native creatures on this continent to attract the attention of the English settlers. The bright plumage recalled the very colors of George Calvert, the first Baron Baltimore, and his son Cecil, who founded the colony of Maryland[11] as a refuge for Catholics. The Protestants, who predominated elsewhere in the colonization movement, may or may not have noticed this bird; at any rate they found nothing in **their** English vocabulary that could apply to it so neatly. Thus the handsome songbird, along with the state of **Mary**land, can serve to remind us of an important undercurrent in the history of England and America: how that family, which had embraced the Catholic religion, contributed something permanent, unforgettable, and different to the new country.

Calling it the "Baltimore bird" implied that it did not resemble any specific bird familiar to Englishmen. *Oriole* was applied to it later; for the European oriole occurs just sparsely in parts of England and is little known there, being more characteristic of southern Europe. The combination *Baltimore oriole* is credited to Alexander Wilson (1808),[12] who remarked that it "is generally known [as] the Baltimore bird." Happily the combination, with its prestigious sound, became established in American English usage before the scientific classification of birds advanced to the point of deciding that the orioles (so-called) of the new world are not — after all — related to those of Europe, Africa, and Asia, but should rather be grouped into a family with the American blackbirds, cowbirds, and meadowlarks.

While the Baltimore bird (or Baltimore oriole) took up residence around farms and villages, it had no particular connection with the town of Baltimore, which was founded in 1729 and so named in honor of the noble family.[13] However, as the town grew to be a great city and far surpassed the fame of those barons, in people's minds the bird became associated with it, although actually ranging over half the continent.[14] That indirect association with the city on the East coast has influenced the recent ornithologists adversely. For when they concluded that *Icterus galbula* and *Icterus bullockii* constitute one species, *Icterus galbula*, and therefore are not entitled to different English names, they could scarcely entertain the possibility of just dropping the name "Bullock's oriole", and stretching "Baltimore oriole" to cover the western subspecies as well as the eastern. It would have seemed unfair to demote only the one English name, "Bullock's Oriole"; no, the other one, "Baltimore Oriole", also had to go.

But by a quirk, of the sort that we often observe in matters of language, the association of the Baltimore oriole with the city is now a cultural fact that will not give way to the preference of the ornithologists. For regardless of their recent decision, a major-league baseball team is called the Baltimore Orioles; and every player wears the emblem on his shirt — just like the Cardinals in St. Louis.[15] It would be absurd for anyone in Baltimore to propose a new name for the team, on the ground that the experts in ornithology have decided to say, henceforth, *northern oriole* instead of *Baltimore oriole.*

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[10] See my article, "The English and the American Robin," *The Third LACUS Forum 1976*, pp. 128-29. In the first citation *Baltimore* was misspelled "Baltenore".

[11] Officially in honor of Henrietta Maria, queen of England (Henriette Marie, daughter of Henry IV of France by his second wife, Maria de' Medici); but no doubt the Calverts were expressing their devotion to the Virgin Mary.

[12] See Craigie and Hulbert, *A Dictionary of American English on Historical Principles* (University of Chicago Press, 1944), s.v. "Baltimore". The first occurrence of *oriole*, according to the *Oxford English Dictionary*, is no earlier than 1776: "This beautiful bird is common in several parts of Europe" — in contrast to an explicit statement in 1848: "uncommon in England."

[13] Several other places in the colony had previously been called Baltimore but proved impermanent.

[14] The *OED* is oddly misinformed on this point: "found throughout North America".

That is unlike the situation of the Cleveland Indians, and other teams with similar names, which have been intermittently under considerable pressure to drop a name resented or rejected by the "politically correct" among the Native Americans and their allies. Such names were adopted, in the first place, out of admiration for the Indians of this continent — admiration for them at least as warriors full of courage, cunning, loyalty to one another, and ruthlessness. But that very stereotype, with its implications, annoys a sector of public opinion that is not negligible. On the other hand, it can scarcely come to pass that the ornithologists will some day be a pressure group, whose angry protests the baseball players of Baltimore have to fend off. We can rest assured that millions of baseball fans everywhere will go on calling them the Baltimore Orioles.

It is too early to predict whether the other millions of bird-watchers, after my generation, will dutifully defer to the authorities and say (for instance), "Yesterday we saw our first northern oriole of the year." I hope they will hold on to the more meaningful expression: "our first Baltimore oriole". The books, at least those for recreational bird-watchers, still give — along with the caption NORTHERN ORIOLE next to the pictures — also the old names "BALTIMORE ORIOLE" and "BULLOCK'S ORIOLE" within quotation marks, suggesting that the birds are sometimes called that, though not quite properly.

A guidebook, to serve its purpose, must in any case show the reader the striking difference between the eastern and the western race. For if you see one of them in an area where it is much less usual than the other, that is a truly memorable experience, which you want to share with persons of similar taste. You hope they will go looking for the same rare sight that you have just enjoyed. But if you were to call it merely "the western subspecies of the northern oriole", that would minimize the import of the bird's presence outside of its normal range. Only if the purview of a book is limited to a state or region where one subspecies occurs but the other hardly ever, can the authors then afford to suppress the old name, *Baltimore oriole* or *Bullock's oriole.*[16]

I reiterate that common sense requires the two names, in order to express a strikingly evident distinction. Returning to the motto, "Zoölogical nomenclature is a means, not an end, to Zoölogical Science," I have some further thoughts, as a lin-

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[15] Formerly this species was called simply "the red Bird" (as early as 1670) or redbird. *Cardinal,* referring to the bird, appeared first in a supplement, written up by the Sieur de Mitchel, to Joutel's *Journal of the Last Voyage Perform'd by Monsr. de la Sal[l]e to the Gulph of Mexico* (Engl. tr.: London, 1714), 191: "There is a Sort of Bird, all red, which for that Reason is call'd the *Cardinal;* this they often tame and teach to sing like a *Canary* Bird. This is what I have been told concerning the Town of *Veracruz.*" Even without this notice we could surmise that such a picturesque designation occurred to Catholics, either Spanish or French, rather than to Protestants. But it must somehow have been picked up rapidly by some of the English colonies (perhaps through a vogue for this new kind of pet songbird); for Franklin in 1786 wrote, "It is rare that we see the Cardinal Bird so far north as Pennsylvania." Since his time it has extended its range even to parts of Canada.

[16] E.g., W. J. Boyle, *A Guide to Bird Finding in New Jersey* (New Brunswick: Rutgers University Press, 1986), p. 12, etc.; M. B. Simpson, *Birds of the Blue Ridge Mountains* (Chapel Hill: University of North Carolina Press, 1992), p. 18, etc.; S. C. Kendeigh, *Bird Populations in East Central Illinois* (Illinois Biological Monographs 52; University of Illinois Press, 1982), p. 18, etc.

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Had I been consulted, without being a professional ornithologist, I would have urged such considerations, which (it appears) were either not brought up by anyone or else put aside as irrelevant. The sentiments that so powerfully affect the common use of language are supposed to have no bearing upon the sciences, where only the observable facts carry weight. But I question whether that is quite so in ornithology: Would pure scientific curiosity motivate more than a few to concentrate upon birds, if not for the attraction of their colors, their song, their graceful flight?[18]

It becomes a narrow-minded exercise of correctness to disregard the connotations that have grown up along with a well-known name, over an extended time, and to reject it for the sake of some broad principle. Even if the principle itself is wisely thought out, it does not deserve absolute control over language usage. In this regard, the history of languages informs us that when a certain pattern — morphological or syntactic — gains the upper hand and becomes a general rule, some contrary patterns linger where they are most firmly entrenched. For instance, the odd plural forms in England, such as *feet, mice, children,* are not mere hold-overs; they convey a somewhat different relationship to the singular from what is simply expressed by *hands, rats, boys.*[19]

The language makes room for much variety. It allows certain users to place special constraints — their own "do's and don't's" — which they would like other people to accept in full. But not all their constraints are amply warranted, even if most of them are. So we are under no intrinsic obligation to yield to their authority against our better judgement, when our individual judgement is indeed better, more fully informed and rational than theirs. That applies to any authoritative book, whether it is a famous dictionary or the *Check-list* of the American Ornithologists' Union.[20]

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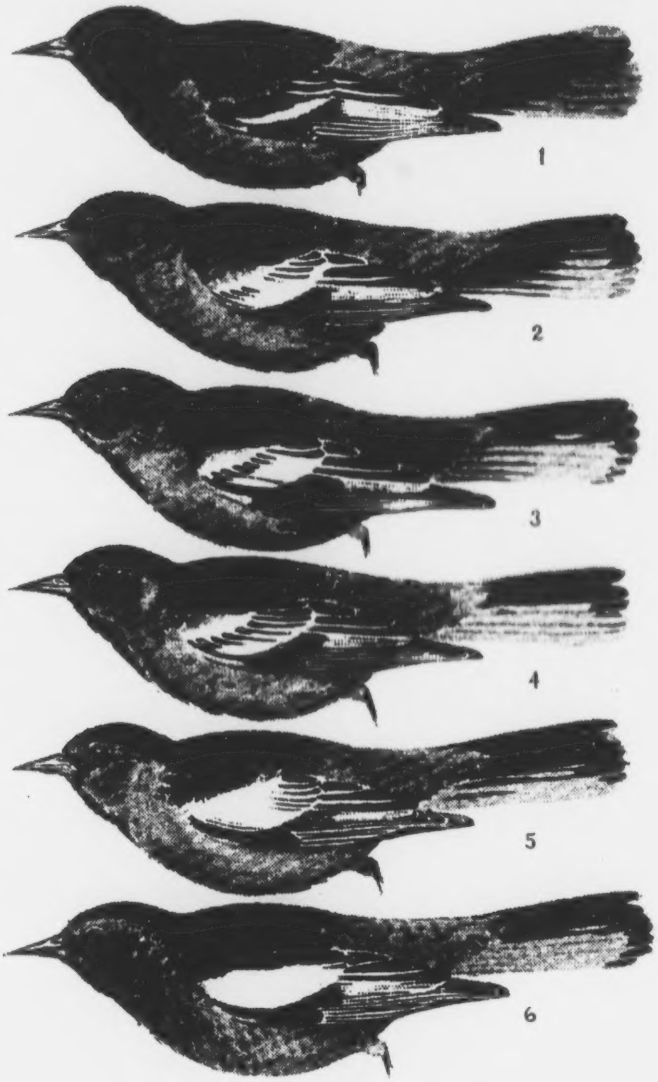
[18] I confess it appalled me to read that Sibley and Short (above, note 7) got their data mainly by "collecting" — i.e., shooting — **hundreds** of orioles. To be sure, they were confident that both Bullock's and Baltimore orioles, as well as the hybrids, were on the increase throughout the region anyhow, and so this slaughter would not lead to the diminution or disappearance of these birds. What has been made illegal for other people, because it is **morally** wrong, does not apply to a professional researcher; his end justifies the cruel means.

[19] As I have explained in "Tradition and Psychological Reality in the Categories of Morphology, Illustrated by the Plural of English Nouns," *Actes du* $X^{e}$ *Congrès International des Linguistes, Bucarest, 28 août — 2 septembre 1967,* III (1970), 317-321.

[20] After I read this paper to the LACUS audience in Vancouver on August 11, 1994, my friend and colleague Angela Della Volpe (from California State University in Fullerton) told me that by a happy coincidence, on the day she read my abstract, she heard Paul Harvey state in his radio news broadcast that the ornithologists, bowing to various strong objections, had decided at last to give up "northern" and go back to "Baltimore oriole". Neither she nor I, however, can confirm the accuracy of this report — which I would of course welcome if true.

Of these specimens (described by Sutton — see footnote 6), the one at the top is a pure (or nearly pure) male Baltimore oriole, and the one at the bottom a male Bullock's oriole. The four in between are unmistakably hybrids.



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# THE VERB IN THE SERVICE OF CHARACTER CREATION: FOCUS ON OTHELLO (Shakespeare 1604)

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## I. Introduction

In this study we shall examine the verb-action-character compatibility in the dramatic development of Othello, Shakespeare's "genuine warrior-lover ... a poetical hero" (Goddard 1967:264,22), "symbol of human, especially masculine 'purpose, Courage, and Valour'" (Knight 1957:107) who "trails clouds of glory from the age of chivalry" (Fisch 1971:28). He is the "Worthy Othello... the Noble Moore" of "good nature" (Mont., II.ii.221, 158, 152) "whom our full Senate/Call all in all sufficient... the Nature/Whom Passion could not shake, Whose solid virtue/The shot of Accident, nor dart of Chance/Could neither graze nor pierce" (Lod., IV.i.295-299). Yet, he "that was once so good" (Lod., V.ii.357) and "great of heart" (Cassio, V.ii.436), undergoes a shocking, incredible change when he is maliciously manipulated by Janus-faced Iago, cynic, liar, arch-villain and master-mind of knavish treachery, deceit and deception. His abysmal hatred of the Moore, sounded throughout the play ("I have/told thee often, and I re-tell thee againe, and againe, I/hate the Moore" (I.iii.393-395, 410)), is accentuated as he engenders his satanic plot of revenge, mocking at Othello's/ "free and open Nature,/That thinkes men honest, that but seeme to be/And will as tenderly be lead by th' Nose/As Asses are" (I.iii.423-426). Set on ruining Othello, his faith in human values, his brilliant warriorship, his love, he injects the seed of jealousy into the simple, credulous mind of Othello, convincing him of Desdemona's faithlessness, thus hurling him, blinded by searing passion, into the torturing clutches of "jealousy.../the green-eyed Monster, which doth mocke,/The meate it feeds on" (III.iii.193-195). Maddened unto fury "Ensnared...Soule and Body" by that "demy-Divell" (V.ii.368-369), our "Noble and Valiant General" (II.ii.1-3), the tender lover and gentleman, model of self-confidence and self-control, turns rash, obscene, violent and cruel, ultimately committing the act of murder in what he believes to be a just and honourable "cause" (V.ii.3-5, 361-362).

Noting that character is predominantly qualified by action, that "persons in drama 'through their action...take on character'" (Battenhouse 1969:66, quoting Aristotle, *Poetics* vi.13), how does the verb serve in manifesting Othello's dramatic development, his states of mind, his character!

## II. Our Linguistic Methodology

Applying the linguistic methodology developed for a study of Lear's verbal expressions (Nameri, 1984, 1990, 1992), we shall attempt to examine the stylistic means *in terms of verbal expressions* by which Shakespeare conveys Othello's 'activity' or 'passivity'. In other words, where is Othello's *semantic role* that of an *agentive* ('active') or *a non-agentive* participant *in the action described by the verb in the proposition*? We shall confine Othello's participant role to two types: *Agentive* (*A*) and *Non-Agentive* (*NA*). The latter will embody the semantic roles of *Patient* and *Experiencer* (Lyons 1977:483). The only way we can talk about Othello as *Agent* or as *Non-Agent* in the linguistic sense is *if he figures as a participant in the semantics of the proposition.* We shall thus consider only those of Othello's speeches *in which he refers to himself* (deleted pronouns or other references to himself must be inferred) as *Agent* of the action described by the verbal expression in the clause, or as *Patient* or *Experiencer*, i.e. *Non-Agent.*

The semantic role of *Agent* will be defined in general terms as that of *the participant who intentionally and voluntarily initiates or causes the action described by a non-stative (action, dynamic) verb in the clause* ("I will a ... Tale deliver/Of my whole course of Love", I.iii.106-108). The semantic role of *Patient* will be defined as that of *the participant who is the recipient of the action described by such a verb* ("Thou hast set me on the Racke", III.iii.390). The semantic role of *Experiencer* will be defined as that of *the subject of a stative (non-action) verb* ("I have a paine upon my Forehead, heere", III.iii.331), and as that of the entity in the "Dative" case ("She ... gave it me," III.iv.76). We shall define a stative verb as a verb denoting a *mental state* (e.g., verbs of perception, cognition, reaction, etc.), or a relation (e.g., verbs denoting existence, possession, negation, equation, etc. (See, esp. Lakoff 1966, Vendler 1966,. Joos 1968:116-119, King 1970, Scovel 1971, Miller & Laird 1976, Lyons 1977, McIntosh 1977, Halliday 1978:64, 84, 148-149, Hopper & Thompson 1980).

Two parallel lines of proof will be drawn to test the extent of the verb-action-character compatibility, thus of Othello's semantic role as *Agentive* (*A*) or *Non-Agentive* (*NA*). One line of proof will be to look at all of Othello's distinct *Agentive speech acts*: imperatives (*I*), entreaties (*E*), curses (*C*), oaths (*O*) and threats (*T*). Each carries determination, power, intention, volition, and thus conveys *Agentivity* (see, esp., Jakobson 1960, Austin 1962, Searle 1970, Ohman 1973). The second line of proof will be to see where Othello is an *Agentive* (*A*) or a *Non-Agentive* (*NA*) participant *when he makes reference to himself* or *when he is not mentioned but understood (inferred) in the grammatical sense.* Thus we shall use (*Agentive*) (*A*) in two different senses:

1) Othello's explicit *Agentive* (*A*) speech acts — imperatives, curses, etc. All denote *Agentivity* (*A*).

2) Other verbal expressions (as described above in the second line of proof) in which *the verb in the main clause of the utterance* will determine who is doing the action described by that verb and its complements (modals, etc.). These verbal expressions will include imperatives (*I*) and entreaties (*E*) where Othello *is referring to himself* but is not necessarily in the *Agentive* (*A*) role. They will be marked as *Agentive* (*A*) in describing the role of the participant who *utters* this speech act (imperative or entreaty), and as *Non-Agentive* (*NA*) in describing the role of the participant who in the same speech act is not the *Agent*, but the *Patient* or *Experiencer*. In the *NA* category these will be marked ($I_2$) and ($E_2$), respectively.

A. Examples of the Two Lines of Proof (see Table and Graph below).

Line of Proof 1 (*A*):

a. "He that stirs next.../Holds his soule light." (II.ii.197-198) (*A*)(*T*)
b. "Repaire there to me." (III.ii-4) (*A*)(*I*)
c. "I sweare 'tis better to be much abused
Then but to know't a little." (III.iii.391-392) (*A*)(*O*)
d. "Damne ler lewde Minx." (III.iii.542) (*A*)(*C*)
e. "I pray you...Speake of me as I am." (V.ii.413-415) (*A*)(*E*)

Line of Proof 2 (*A*) or (*NA*):

a. "Keepe up your bright Swords." (I.ii.75) (*A*)(*I*)
b. "Repaire there to me." (III.ii.4) (*NA*) ($I_2$)
c. "I'll teare her all to peeces", (III.iii.493) (*A*)
d. "I pray you ... speake of me as I am." (V.ii.413-415) (*NA*)($E_2$)

B. Examples of Selected Types of Othello's Verbal Expressions.

We must bear in mind that it is hardly characteristic of language to make absolute, clean-cut distinctions. There may be discrepancies, "leakages" (Sapir 1949:38). We must constantly be aware of the verb (+ complements) ***within its dramatic context,*** "look at the language as a whole" (Jespersen 1924:51; Firth 1962, Austin 1962, Halliday 1978:33, 142).

1) Performatives/Illocutionary Acts (Austin 1962, Searle, 1970) (*A*)

a. "I do confess the vices of my blood." (I.iii.147)
b. "I did consent." (I.iii.178)
c. "I obey the Mandate." (IV.i.289)

2) "Let" (me, us, etc.) constructions, considered as imperatives (*I*) or entreaties (*E*). (Quirk et al., 1972, Doran 1976:94). (*A*). *Some are also (NA) of Line of Proof 2* (marked $I_2$ and $E_2$. My italics):

a. "Let her have your voice." (I.iii.288) (*A*)(*I*)
b. "Let *me* have speech with you." (II.ii.24) (*A*)(*I*),(*NA*)($I_2$)

3) Imperatives where the verb is omitted but understood (*A*):
a. "[Fetch] The Handkerchiefe." (III.iv.109)
b. "[Get] Out of my sight." (IV.i.274)

4) Curses where the verb is omitted but understood (*A*):
a. "[Let her] be damn'd/tonight," (IV.i.198-199)

5) Deletions of pronouns and other references to Othello will be inferred (*A*) or (*NA*):
a. "[I] thought it not." (III.iii.395) (*NA*)
b. "And [I] smote him thus." (V.ii.430) (*A*)

6) Deletions of pronouns (or nouns) and verbs are inferred by force of the proposition, often governed by a preceding utterance. (*A*) or (*NA*)
a. "[Give me to know]...Who set it on." (II.i.235)(*A*)(*I*)
b. "No, [I am] not much mov'd:" (III.iii.263) (*NA*)
c. "[Cuckold me] With mine Officer?" (IV.i.220) (*NA*)

7) Unreal, Conditional, or Imaginary Constructions (*NA*):
a. "Were it my Cue to fight, I should have knowne it
Without a Prompter." (I.ii.101-102)
b. "Or [haply] for I am declin'd
Into the vale of yeares.../She's gone." (III.iii.309-311)

8) Othello's references to the Universal "we", "us", etc. will not be considered.

C. Our counting Scheme

1) A verbal expression (verb, verb + complement: modals, subordinate clauses, etc.) *will be given a value (count) of one when it constitutes a complete, independent speech act, idea, in its dramatic context.* This includes "Prithee", "Pray you" followed by an infinitive, conditional constructions, a one-word imperative, each counted separately when repeated in the same proposition:
a. "I prythee let thy wife attend on her," (I.iii.327) (*A*)(*E*)
value of one
b. "Ah Desdemona, [Go] away, [Go] away,
[Go] away." (IV.ii.50) (*A*)(*I*)
value of three

2) "Go" and "Come" and the infinitive that follows will be counted separately:
a. "Come go with me a-part." (III.iii.544) (*A*)(*I*)
(*A*)(*I*)(*NA*)($I_2$)
value of three
b. "Come sweare it:" (IV.ii.42) (*A*)(*I*)(*A*)(*I*)
value of two

3) "See" used *Agentively* (*A*) when expressing intentions, determination,

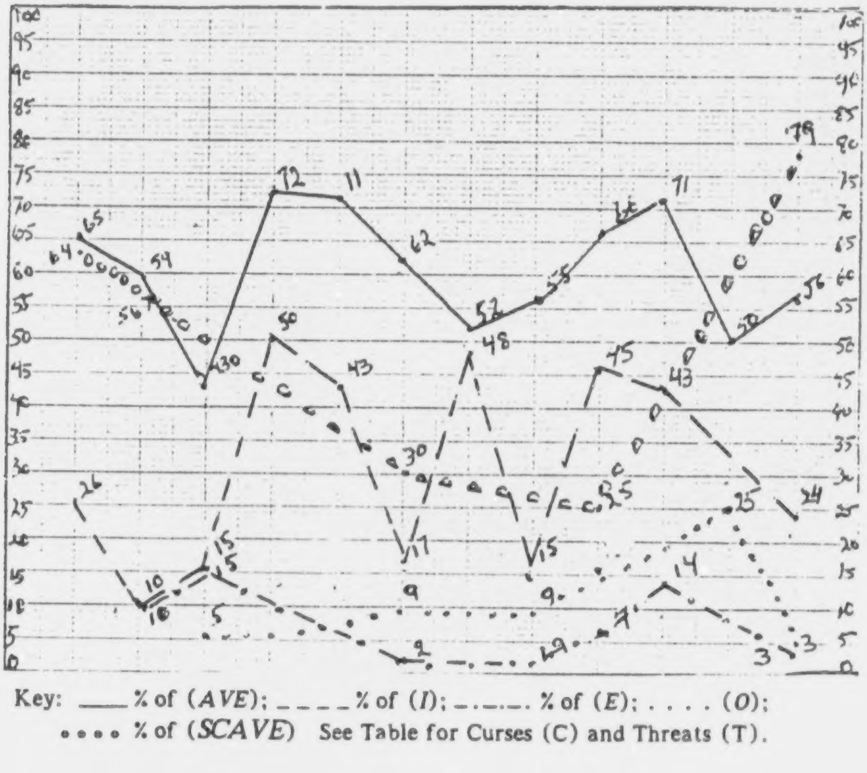
*Graph* . Percentage of Othello's *Agentive Verbal Expressions* (*AVE*); *Imperatives; Entreaties; Oaths; Threats; Curses* in relation to the total number of his Verbal Expressions (*TVE*) in each scene; (*SCAVE*) self-characterizing *AVE*.

Scene Identifications:

1. I.ii. Background; Character – merits honor, respect.
2. I.iii O. relates how he won D.'s love.
3. II.i. O. & D. rejoin in Cyprus; O. happy, calm, content.
4. II.ii. The night brawl; Cassio dismissed.
5. III.ii. O. – The General on duty.
6. III.iii. Temptation and damnation of O.
7. III.iv. O. terrorizes D.; demands "The Handkerchief!"
8. IV.i. O. raves; strikes D.
9. IV.ii. O's fury; cruelty to D.; self-torment.
10 IV.iii. O. resolves. D. must die.
11. V.i. O.'s fatal trust in Iago–exits to kill D.
12. V.ii. The deed; tragic enlightenment.

Refs. = References = Act/scene/lines, where Othello is a participant and makes reference to himself, or where references to himself are inferred.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I.ii | I.iii | I.i | II.ii | III.ii | III.iii | III.iv | IV.iv | IV.ii | IV.iii | V.i | V.ii |
| 20– | 95– | 210– | 16– | 1–8 | 44– | 43– | 23– | 23– | 5–13 | 39– | 3– |
| 111 | 302 | 245 | 286 | | 574 | 115 | 293 | 109 | | 44 | 434 |



Key: ____ % of (*AVE*); _ _ _ _ % of (*I*); _._._. % of (*E*); . . . . (*O*);
• • • • % of (*SCAVE*) See Table for Curses (C) and Threats (T).

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volition;

a. "No Iago, / Ile see before I doubt;" (III.iii.218-219) (*A*) value of one

## III. Hypothesis

My hypothesis is that there will be *more Agentive Verbal Expressions* (*AVE*) — manifestations of his *Agentive* (*A*) semantic role — when Othello speaks of his martial occupation, his services to Venice; when he is in command in Cyprus; when pitted against Iago's manipulation; when, in fury, he terrorizes Desdemona; when he resolves to kill her; the execution, his tragic enlightenment. There will be *fewer AVE* — manifestations of his (*NA*) semantic role — when he is calm, at peace and content in the love he shares with Desdemona when they are reunited in Cyprus, and, conversely, when ensnared by "honest" Iago, he goes off to kill her.

## IV. Linguistic Results and Literary Analysis — A compatibility

Othello first appears in I.ii after Iago and his dupe, Roderigo, had instigated Brabantio, Desdemona's father, against him, divulging grossly the elopement of Desdemona with the "Lascivious Moore" (I.i.139). He now warns Othello of Brabantio's threats against him. Othello rejects the warning, confident of his own worth.

> *Othe.* Let him do his spight,
> My Services, which I have done the Signiore
> Shall out-tongue his Complaints.../
> My Parts, my title, and my perfect Soule
> Shall manifest me rightly. (I.ii.20-22, 36-37)

He is gentle and patient, yet commanding, when confronted by the assault of Brabantio's party.

> *Othe.* Holla, stand there...
> Keepe up your bright Swords, for the dew will rust them, Good Signior, you shall more command with yeares, than with your Weapons.
> (I.ii.71...,75-77)

His undaunted response to Brabantio's charges against his having enchanted, stolen, abused his daughter, ordering to "Lay hold upon him... Subdue him" (I.ii.97-98), is spoken in the same vein:

> *Othe.* Hold your hands... /
> Whether will you that I goe
> To answere this your charge? (I.ii. 99-103)

I.ii shows a high percentage of Othello's *Agentive Verbal Expressions* (*AVE*) -- 65%, including 26% imperatives/35% *NAVE* (*of the total number of his verbal expressions* (*VE*) *when referring to himself*) — a manifestation of his predominant *Agentive* semantic role in this scene.

In I.iii Othello is threatened by the Duke to severe punishment (82) should Brabantio's accusation be true that he had used "Spels,... witch-craft" (76-79) to beguile Desdemona. His response, respectful and sincere, reflects a nature modest, out-spoken, truthful and simple-minded:

*Othe.* That I have tane away this old man's Daughter,
It is most true; true I have married her;
The verie head and front of my offending,
Hath this extent, no more. Rude am I in my speech,
And little bless'd with the soft phrase of Peace,.../
And little of this great world can I speake,
More than pertaines to Feats of Broiles and Battaile,
And therefore little shall I grace my cause,
In speaking for my selfe. Yet, .../
I will a round un-varnish'd Tale deliver,
Of my whole course of Love. (I.iii.95-108)

In effect, at the root of their romance was Brabantio himself, who "lov'd me, oft invited me:/Still question'd me the Storie of my life,/From yeare to yeare; the Battaile, Sieges, Fortune/That I have past" (151-154). Desdemona loved "These things to heare" (168) and begged "That I would all my Pilgrimage dilate" (176), disclosing that stories such as these "would woe her" (189). Othello admits:

*Othe.* Upon this hint I spoke.
She lov'd me for the dangers I had past,
And I lov'd her that she did pitty them.
This only is the witch-craft I have us'd. (189-192)

Desdemona's confession that she was "halfe the wooer" (200) pacifies the audience. Othello will "undertake/This present Warres against the Ottomites" (259-260) in Cyprus where Desdemona will join him.

Othello's high percentage of *AVE* in I.iii (59%/41% *NAVE*) manifests again the predominance of his *Agentive* semantic role here.

A sharp drop in Othello's *AVE* (43%) occurs in his next appearance, in II.i. He has landed safely in Cyprus, the war is over. Reunited with Desdemona, "my Soules Joy" (II.i.212), he is in a state of supreme happiness, content and peace of mind.

*Othe.* If it were now to dye
Twere now to be most happy. For I feare,
That not another comfort like to this,
Succeeds in unknowne Fate..../
I cannot speake enough of this content
It stops me here: it is too much of joy. (ii.i.217-218)

Othello's *Non-Agentive* semantic role in II.i is markedly predominant with a low 43% *AVE*/57% *NAVE*.

But Iago had already "engendred" his "monstrous" plot of revenge against Othello (I.ii.427-428). He will use Roderigo to "ensnare" (II.i.193) Cassio and through him destroy the happiness and the harmony of the newly-weds (II.i.231-232). He will "Abuse" [Cassio] to the Moore",. make an "Asse" of Othello and "practise...upon his peace and quiet,/ Even to madnesse" (II.i.239-244).

The "barbarous" night brawl in II.ii *devised by Iago* is put to an immediate end by Othello, commanding, threatening:

*Othe.* Hold for your lives..../
He that stirs next to carve for his owne rage,
Holds his soule light. He dies upon the Motion. (II.ii.189, 197-198)

Angered, he demands who began this "private and domesticke Quarrell" (249). Iago trickily insinuates that it was Cassio, whereupon the "Lieutenant" is dismissed — gently, but firmly (II.ii.275-276).

In II.ii we part from "our Noble, Valiant Generall" (3,13), of "good nature" (152), "the Noble Moore" (156), the "Worthy Othello" (221), the gentle, loving warrior-husband (281-287), the self-confident stately figure commanding obedience and respect.

Othello's predominant *Agentive* semantic role in II.ii is marked by the high percentage of his *AVE* (72%, including 50% imperatives, 5% curses, 10% threats/28% *NAVE*).

By Iago's wily strategem, Cassio, dismissed, will be urged to appeal to Desdemona to plead to Othello "to repaire his fortune". Iago "will powre this pestilence into his eare/That she repeals him, for her bodies Lust", thus will she "undo her Credite with the Moore," Iago "will turne her virtue into pitch, /And out of her owne goodnesse en-mash them all" (II.ii.385-393).

When Othello next appears in III.ii, he is wholly the military figure on duty — the commander-General with his "Gentlemen" about to inspect the "Fortification" (8). His semantic role here, as in II.ii, is predominantly *Agentive* with 71% *AVE*, incl. 43% imperatives/29% *NAVE*.

In III.iii, the scene of the temptation and damnation of Othello, "perhaps the most terrible scene in all literature" (Halliday 1964:149), we witness an ingenious exercise in psychology as Othello changes under the diabolic influence of "honest" Iago's venomed "Medicine" (IV.i.54). Mark his declaration of love early in the scene,

*Othe.* Excellent wretch: Perdition catch my Soule
But I do love thee: and when I love thee not,
Chaos is come againe. (III.iii.104-106)

and his wrathful outcry at the end:

*Othe.* Damne her lewde Minx:
O damne her, damne her. (III.iii.542-543)

Iago has been insinuating treacherously Desdemona's inconstancy, warning him to "beware of jealousy" (193–194), urging, against Othello's "Ile see before I doubt" (219): "Looke to your wife, observe her well with Cassio/Looke too't" (226–229). His deceitful alibi for his concern — "For loving you too much" (246) — wins the credulous Othello's total trust (247). Iago persists in practising upon his victim's "peace and quiet" (II.i.239–244). His repeated devilish suggestion that "this hath a little dash'd your Spirits" (248, 250–253, 262) is weakly countered: "Not a lot, not a lot"...No not much moov'd/I do not think but Desdemona's honest" (249, 263–264). He struggles against suspicion: "Ile not beleev't" (324).

Iago has trickily procured Desdemona's cherished "Handkerchiefe". He will use this "trifle light as ayre" (375) to undo the Moore. He glories in his success: "The Moore already changes with my poyson", to "Burne like the Mines of Sulphure" (378–382).

Tortured, Othello admits: " Thou hast set me on the Racke" (390) . Without Desdemona's love nothing is of value in his life. Heart-broken, he pronounces his noble farewell to peace of mind and to the glory and pride of war.

> *Othe.* Oh, now, forever
> Farewell the Tranquill minde; farewell Content;
> Farewell the plumed Troopes, and the big Warres,
> That make Ambition, Vertue!.../
> Farewell: Othello's Occupation's gone. (III.iii.430–414)

Yet he seeks conviction, threatens, orders:

> *Othe.* Villaine, be sure thou prove my Love a Whore,
> Be sure of it. Give me the Occular proofe,/...
> Make me to see'it; or (at the least) so prove it./...
> If thou dost slander her, and torture me,
> Never pray more: Abandon all remorse. (III.iii.415–420)

Anguished, he would still believe her innocent.

> *Othe.* By the World,
> I think my Wife be honest, and thinke she's not,
> I thinke that thou art just, and thinke thou art not:
> Ile have some proofe. /...
> Give me a living reason she's disloyal. (III.iii.442–445, 470)

Iago readily accommodates by his deceitful tale of Cassio's dream about Desdemona and his use of her "Handkerchiefe" (479–486, 499–501). Firmly convinced: "Now do I see 'tis true" (507), the enraged Othello, already "eaten up with Passion" (450), kneels vowing "blacke vengeance... tyrannous Hate" and "a capable and wide Revenge" (509–522). Charging Iago with the execution of Cassio, he curses the "lewde Minx", withdraws "to furnish me with some swift meanes of death/For the faire Divell", and appoints Iago his "Lieutenant." (III.iii.537–547).

The drop in Othello's *AVE* in III.iii (62% *AVE* /38% *NAVE* from 71% *AVE* in III.ii) is due mainly to the frequency of stative verbs of the senses expressing his torment — his confusion, doubt, distraction — and *VE* of *Line of Proof 2* — all *NA*, e.g.: "I do beseech thee" (98, $E_2$), "Leave me Iago." (283); "Haply for I am black,.../She's gone" (307-310), "I am abus'd" (311), "Ile not beleev't" (324), "I am to blame" (328), "Give me the occular proofe," (416), "Ile not indure it" (449).

In III.iv, the maddened Othello terrorizes Desdemona by demanding the "Handkerchiefe" — the "occular proofe" he had demanded of Iago (III.iii.416). Iago pretends surprise, "Can he be angry?" (III.iv.156, 159). "Something sure of State.../Hath puddled his cleare Spirit", surmises Desdemona (162-165). It cannot be that he is jealous, for "my Noble Moore/ Is true of minde, and made of no such basenesse" (III.iv.29-30).

In III.iv Othello is to a great extent, the *Patient* and the *Experiencer* in relating the story of the "Magicke...Handkerchiefe" and *NAVE* of *Line of Proof 2*, e.g., "Fetch me the Handkerchiefe" (105, $I_2$). His *AVE* drop, accordingly, to 52% *AVE/48%NAVE*, from 62% *AVE* in III.iii.

In IV.i, Iago's "Medicine" is devastatingly at work. He will not allow his victim to forget.

*Othe.* By Heaven, I would most gladly have forgot it;
Thou said'st (oh, it comes ore my memorie)...
... he had my Handkerchiefe. (IV.i.23-26)

Maddened by Iago's continuing lecherous insinuations, Othello bursts into disconnected, incoherent raving:

*Othe.* Lye with her? lye on her.../Lye with her... is't possible? Confess?
/Handkerchiefe? O divell. (*Falls in a Traunce* IV.i.44-52)

Iago gloats: "Work on./
My Medicine workes. Thus credulous Fooles are caught.
(IV.i.53-54)

To advance his scheme he devises further lascivious tales about Desdemona, Cassio and the "Handkerchiefe" (IV.i.68-160, 192-194). Credulous Othello reacts with oaths, curses, threats:

*Othe.* ... let her rot and perish, and be damn'd to night,
for she shall not live. (IV.i.198-199)

Yet, he praises her qualities and skills, becrying, pitying that so sweet a Creature... so witty and gentle (200-210) should be so sinful. Iago will not allow a softening and turns her qualities into "iniquitie" (215-217), "her vertue into pitch" (II.ii.391). Gullible Othello's response is immediate:

*Othe.* I will chop her into Messes: Cuckold me?.../
With mine Officer?.../
Get me some poyson, Iago, this night...this night, Iago, (IV.i.218-224)

Iago's knavish advice that he strangle her "in her bed,/Even the bed she had contaminated" (225-226), is readily accepted: "The Justice of it pleases: very good" (228).

When Desdemona, unsuspecting, begs Lodovico to mend the "unkinde breach" (246) between Othello and Cassio "for the love I beare to Cassio" (252-256), Othello's fury is beyond control. Cursing vehemently, he strikes her (266), mocks at her "teares" (284, 286) and exits hurling the suggestive "Goats and Monkeys" at her (294-Iago's very words (III.iii.464)). The astounded Lodovico queries in disbelief;

*Lod.* Is this the Noble Moore, whom our full Senate
Call all in all sufficient? Is this the Nature
Whom Passion could not shake? Whose solid vertue
The shot of Accident, nor dart of Chance
Could neither graze, nor pierce? (IV.i.295-299)

The rise in Othello's *AVE* in IV.i to 55%/45% *NAVE*, includes a high percentage of *oaths* and *curses* (9% each), with 15% *imperatives.*

In IV.ii, "one of the scenes of greatest cruelty in Shakespeare" (Evans 1966:155), Othello persecutes Desdemona accusing her of dishonesty.

*Othe.* Come sweare it: damne thy self; .../
... be double damn'd; sweare that thou art honest.../
Heaven truly knowes, that thou art false as hell. (IV.ii.41-47)

He is in agony over the unbearable thought that he has lost her love, and with it his peace of mind, his patience, his source of life, his very *raison d'être* (IV.ii.58-70).

Desdemona's repeated pledges of her honesty are angrily scorned, abused, mocked at. She is as honest "as Sommer Flyes are in the Shambles/ That quicken even with blowing" (76-77). "Would thou had'st never bin borne" (80). She is a "publicke Commoner" (84), a "Strumpet" (93), that "cunning Whore of Venice,/ That married with Othello" (103-104).

Iago again pretends surprise: "How comes this Tricke upon him?" (152). Unsuspicious of her husband, insightful Aemilia comments with striking accuracy:

*Aemil.* I will be hang'd, if some eternal Villaine,
Some busie and insinuating Rogue,
Some cogging, cozening Slave, to get some Office,
Have not devis'd this Slander:.../
The Moore's abus'd by some most villainous Knave,
Some base notorious Knave, some scurvy Fellow.
(IV.ii.154-157, 166-167)

The rise in Othello's *AVE* in IV.ii to 66% (from 55% in IV.i) includes a high percentage of *imperatives* (45%), *entreaties* and *curses* (7% each).

In IV.iii, resolved that Desdemona must die, he issue his commands to her — curt, sharp, military-styled. There is no trace here of the gentle, loving husband.

*Othe.* Get you to bed on th' instant, I will be return'd forthwith:
dismisse your Attendant there: look't be done. (IV.iii.11-13)

His *AVE* here reach a climactic 71% (29% *NAVE* , with a high percentage of imperatives (43%) - as in III.ii where he was solely the commander.

In V.i, as he goes off to commit the deed, he pledges homage to his "Friend" and mentor:

*Othe.* O brave Iago, honest, and just,
That hast such Noble sense of thy Friend's wrong,
Thou teachest me. (V.i.39-41)

Here it is — the dramatic irony that is the key and leit-motif of this tragedy — all in a nutshell.

The sharp drop here in Othello's *AVE* to 50%/50% *NAVE* is dramatically inevitable. A dramatic development must tip the scale.

Othello enters at V.ii in an agony of mind, tormented by the thought of the deed he is about to perpetrate — the act not a " Murther" but a "Sacrifice" (V.ii.88). "She must die else she'll betray more men" (8). He would justify his cruelty:

*Othe.* It is the Cause, it is the Cause (my Soule),
Let me not name it to you, you Chaste Starres,
It is the Cause. (V.ii.3-5)

He is moved to tears that this "cunning'st Patterne of excelling Nature" (14) could be so unchaste (23-25). When she awakes, he is again the self-controlled "Genrall" commanding her to beg forgiveness for "any Crime/Unreconcil'd as yet, to Heaven/and Grace".

*Othe.* Solicite for it straight,.../
Well, do it, and be briefe. (V.ii.31-36)

His talk of killing her, inconceivable, frightens her. She discerns his perturbed spirit.

*Desd.* And yet I feare you. You're fatall then
When your eyes rowle so.../
Alas, why gnaw you so your nether lip?
Some bloody passion shakes your very Frame: (V.ii.45-46, 53-54)

His speech is staccattoed with commands: "thinke of thy sinnes" (49), "Peace, and be still" (56), "take heed, take heed of perjury" (64), "confesse ... thy sinne" (67), "Downe Strumpet" (99). Her pathetic pleas are cruelly dismissed:

*Desd.* O, banish me, my Lord, but kill me not. (98)
Kill me tomorrow, let me live to night. (100)
But half an houre. (102)
But while I say my prayer. (104)

*Othe.* It is too late. *Smothers her* (105)

Shaken by Aemilia's knocking, he is bewildered, in emotional turmoil. She will desire to speak to her mistress, his wife. The thought that he no longer has a wife is shattering, "insupportible", frightening (V.ii.124-127).

Tragic recognitions, enlightenment and reconciliation come hard but inevitably, developing when he admits to Aemilia that he had killed Desdemona because of her faithlessness, told him so by Iago, who "knew it all" (173). He argues against Aemilia's disbelief:

*Othe.* He, Woman,
I say thy Husband;
My Friend, thy Husband, honest, honest Iago, (V.ii.191-193)

Wild with grief, Aemilia forces Iago to admit that it was as Othello argued (222). Total conviction comes when she discloses how Iago obtained the "Handkerchiefe" (V.ii. 279-284, 286-287), adding to the stricken Othello:

*Aemil.* Oh murd'rous Coxcombe, what should such a Foole
Do with so good a wife?

and dying, when stabbed by Iago:

Moore, she was chaste: She lov'd thee, cruell Moore,
So come my Soule to blisse, as I speake true:
So speaking as I thinke, alas, I dye. (V.ii.290-291, 311-313)

Now, in a quiet, restrained voice he assures all that he will not struggle. He is reconciled.

*Othe.* Who can controll his Fate? 'Tis not so now.
Be not afraid, though you do see me weapon'd:
Heere is my journies end, heere is my butt
And verie Sea-mark of my utmost Saile. (V.ii.328-331)

In a cry of extreme woe he bewails the dead Desdemona (V.ii.336-344), killed by ".An honourable Murderer, .../ For nought I did in hate, but all in Honour" (361-362).

He is reconciled with Cassio, begs his pardon (367), pleads in anguish,

*Othe.* Will you, I pray, demand that Demy-Divell,
Why he hath thus ensnar'd my Soule and Body, (V.ii.368-369)

cries in self-recognition: "O Foole, foole, foole!" (396) after Cassio has disclosed Iago's knavish "Handkerchiefe" "Tricke" (392-395).

As he is to be taken away, a prisoner, he begs to be heard. It will be his final speech (V.ii.411-430), one of self-characterization enhancing those we heard early in the play (I.ii, I.iii). His words are simple, honest, laden with meaning:

*Othe.* Soft you; a word or two before you goe:
I have done the State some service, and they know't;
No more of that. I pray you in your Letters,
When you shall these unluckie deeds relate,

> Speake of me, as I am. Nothing extenuate,
> Nor set downe ought in malice.
> Then must you speake,
> Of one that lov'd not wisely, but too well;
> Of one, not easily jealous, but being wrought,
> Perplexed in the extreame!.... (V.ii.411-420)

It is the story of his life, his loyalty to the State, his devotion to his martial occupation, his love, his tragedy. His last words as he smites himself are to his love, of his love:

> *Othe.* I kist thee, ere I kill'd thee. No way but this,
> Killing my self to dye upon a kisse. *Dyes.* (V.ii.... 433-434)

Othello's *AVE* in V.ii rise to 56%/44*NAVE* from the precipitating 50%/50% in V.i, correlating significantly with his dramatic elevation to the stature of the "Worthy Othello", the "Valiant Noble Moore" (II.ii.221, 313) we knew before he was victimized to madness by Iago.

## V. Conclusion

The results obtained in this study correlate with my initial hypothesis (see p. 5, above) evidencing the compatibility between Othello's *Agentive (A)/Non-Agentive (NA) verbal expressions (VE) and his corresponding semantic role.* We find a high percentage of his *AVE* where, self-confident, and at peace, he speaks of his services to the State and his martial career (I.ii-65% *AVE* /35% *NAVE*; I.iii-59% *AVE* /41% *NAVE*); when in command in Cyprus (II.ii - the night brawl - 72% *AVE* - the highest in the play/28% *NAVE*; III.ii - on duty, inspecting the garrison - 71% *AVE*/29% *NAVE*); the temptation scene, pitted against Iago (62% *AVE*/38% *NAVE*); when, succumbed to Iago, he terrorizes Desdemona (III.iv-52% *AVE*/48%*NAVE*), raves, falls in a trance, strikes her (IV.i-55% *AVE*/45%*NAVE*, with a high percentage of oaths and curses), continues his violence (IV.ii-66% *AVE*/34%*NAVE*, with a high percentage of oaths and curses); resolves to kill her (IV.iii - 71% *AVE*/29% *NAVE*); the execution, his tragic enlightenment and final speech (56% *AVE*/44% *NAVE*).

We find a low percentage of his *AVE* when, reunited with Desdemona in Cyprus, he is calm, happy and content (II.i-43% *AVE* - the lowest in the play / 57% *NAVE*), and, when blinded by his fatal trust in "honest" and "just" Iago - the acme of the dramatic irony at the heart of this tragedy - he exits to kill her (V.i-50% *AVE*/50% *NAVE* - a dramatic balance before the tragic resolution).

Othello's behavior - his field (outer)activity - when *under Iago's diabolic influence* is, as Lodovico queries, unbelievable ("Is this the noble Moore?...", IV.i.295-300). It is by all accounts against his nature, as if he were under a spell, for he suffers self-torment, tears, misery, pity, agony in the very course of his cruel persecution of Desdemona and after the deed.

We shall, then, isolate five of Othello's *self-characterizing speeches* (18-20 lines each) to test/exemplify and compare his *inner/outer verb-action- character relationship* before (I.ii, II.iii), during (III.iii, IV.ii) and after (V.ii) Iago's satanic onslaught: 1) I.ii combining 20-31, 36-37, 75-77, 99-103. Undaunted and self-confident, Othello will brave the angry Brabantio's assault. Here we find 64% *AVE/36% NAVE.* The entire scene, manifesting his *Agentive/Non-Agentive semantic role*, shows 65% *AVE*/35% *NAVE*.

2) I.iii.93-112. Confident of himself, his honor, his deeds, he relates how he won Desdemona's love = 56% *AVE* /44% *NAVE.* The entire scene shows 59% *AVE* /41% *NAVE.* It is pertinent that I.ii and I.iii show a close compatibility between his inner (authentic) and outer (field) activity.

3) III.iii.302-324. Already in the clutches of Iago, depressed, insecure, questioning, he searches within himself for reasons why she may have stopped loving him, doubts: "Ile not beleev't" (324) = 30% *AVE* /70% *NAVE.* The entire scene shows 62% *AVE* /38% *NAVE.*

4) IV.ii.56-74. Anguished and in despair at having lost, as he was made to believe, Desdemona's love, discarded from the very source of his existence (67-70), he fears the degradation of his loss of peace of mind, of patience, of his *raison d'être* = 25% *AVE* - the lowest - /75% *NAVE.* The entire scene shows 66% *AVE* /34% *NAVE.* III.iii and IV.ii mark a sharp discrepancy between Othello's inner and outer activity *when affected by Iago's "poyson"*;

5) V.ii.411-430,his final speech, reflecting his dramatic reversal when, having arrived at recognition, enlightenment, reconciliation and a reaffirmation of his love, he is again his own noble self, descended "from Men of Royall Seige" (I.ii.24-25), glorified by virtue of his simplicity, truthfulness,modesty, honesty. Here he reaches *the peak of his authentic (inner) action/character relationship* with a high 79% *AVE* /21% *NAVE.* The entire scene shows 56% *AVE* . Here we come around full circle *in the close compatibility between Othello's high inner Agentivity (79% AVE) at the end and his high field Agentivity (72% AVE) early in the play, in II.ii, when he was his own self - both the noble, valiant commander and the gentle lover-husband, untouched, as yet, by Iago's villainous manipulation.*

These *unique self-characterizing speeches* illuminate the measure of his inner/mental deterioration when, *like one drugged - as he is by Iago's "Medicine" — he works against his grain.* They are landmarks in Othello's inner dramatic movement from glory and grandeur to moral and bestial deterioration, then, finally, to his reinstatement to the character of the "Worthy Othello" we knew and honored in the first part of this tragedy.

> Seldom in the plays, has Shakespeare made character and
> language fit with such accuracy.
>
> (Evans, 158).

The linguistic-literary analysis undertaken in this study illustrates the invaluable contribution of the art of linguistics in the interpretation of character, especially by discerning hidden and subtle aspects of character that might otherwise be overlooked and/or misunderstood, thus mislead.

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*Table. Othello's Verbal Expressions: Lines of Proof 1 and 2.*

Key: (*A*) = Agentive; (*NA*) = Non-Agentive; *VE* = Verbal Expressions where Othello refers to himself, or where references to himself are inferred: *TVE* = Total number of *VE*; *I*=Imperatives; *E* = Entreaties; *C* = Curses; *O* = Oaths; *Th* = Threats. % = Percentage in relation to TVE in the scene; *SCAVE* = self-characterizing *AVE*. O. = Othello; D. = Desdemona.

| Ref. to Othello's *VE* ll. and Scene Identification | A VE | NA VE | T VE | % A | % NA | I | % I | E | % E | O | % O | Th | % Th | C | % C | % SC AVE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I.ii.20-111<br>O. background; character-merits honor, respect | 15 | 8 | 23 | 65 | 35 | 8 | 26 | | - | - | - | - | - | - | - | 64 |
| I.iii 95-302 O. relates how he won D's love | 41 | 28 | 69 | 59 | 41 | 7 | 10 | 7 | 10 | - | - | - | - | - | - | 56 |
| II.i.210-245<br>O.&D. rejoin in Cyprus; O. happy, calm, content | 9 | 12 | 21 | 43 | 57 | 3 | 15 | 3 | 15 | 1 | 5 | - | - | - | - | - |
| II.ii. 16-286<br>The night brawl; Cassio dismissed | 28 | 11 | 39 | 72 | 28 | 19 | 50 | - | - | - | - | 4 | 10 | 2 | 5 | |
| III.ii. 1-8<br>O. The General on duty | 5 | 2 | 7 | 71 | 29 | 3 | 43 | - | - | - | - | - | - | - | - | - |
| III.iii.44-547<br>Temptation and damnation of O. | 92 | 57 | 149 | 62 | 38 | 26 | 17 | 3 | 2 | 13 | 9 | 8 | 5 | 6 | 4 | 30 |
| III.iv 43-115<br>O. terrorizes D. demands "The Handkerchief!" | 14 | 13 | 27 | 52 | 48 | 13 | 48 | - | - | - | - | - | - | - | - | - |
| IV.i.23-293<br>O. raves; strikes D. | 30 | 25 | 55 | 55 | 45 | 8 | 15 | 1 | 1.9 | 5 | 9 | 1 | 1.9 | 5 | 9 | - |
| IV.ii.23-109<br>O.'s fury; cruelty to D.; self-torment | 29 | 15 | 44 | 66 | 34 | 20 | 45 | 3 | 7 | - | - | - | - | 3 | 7 | 25 |
| IV.iii.5-13 O.<br>O. resolves D. must die. | 5 | 2 | 7 | 71 | 29 | 3 | 43 | 1 | 14 | - | - | - | - | - | - | - |
| V.i.39-44 O.'s fatal trust in Iago-exits to kill D. | 2 | 3 | 4 | 50 | 50 | - | - | - | - | 1 | 25 | - | - | - | - | - |
| V.ii. 3-434<br>The deed; tragic enlightenment | 71 | 58 | 129 | 56 | 44 | 32 | 24 | 4 | 3 | 4 | 3 | 1 | 0.8 | 1 | 0.8 | 79 |

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# FIGURATIVE EXTENSION IN ENGLISH VERBAL IDIOMS OF VISUAL PERCEPTION

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## Introduction

Cross-linguistic and typological generalizations of verbs of perception conclude that verbs of vision are the most highly elaborated of the sensory verbs and that their physical meanings may extend via metaphor to meanings of intellection (Sweetser 1990, Ullmann 1962, Viberg 1983). In contemporary English, this generalization is well-known for nonphrasal verbs, such as *see* in *I see what you mean* in which *see* means 'understand'. And although phrasal verbs of visual perception have not been studied extensively, phrasal dictionaries provide corroboration for the claim: for example, *to see beyond* may mean 'foresee and understand ...' (ODCIE 1:274, s.v. *see beyond*).

The following study asks whether the generalization holds across a previously unexamined database: all British verbal idioms which, with one exception (Idiom 33 in Table 3), contain *eye* as direct object or as constituent in a complement to a verb which itself is not a verb of vision. The idioms and their meanings were collected from contemporary dictionaries of British English (See Dictionaries), except for a very few idioms whose American English meanings were taken from Barron's because they were attested but undefined in British idiom dictionaries. Tables 1-4 comprise the entire set.

In roughly categorizing the idioms into groups, I sought broad correlations between idiomatic meaning(s) and function. Of the 63 idioms, fourteen entries which appear in Tables 1 and 2 and whose meanings are starred do not express idiomatic meanings that bear on the thesis. Data from all other entries not only support the semantic generalization; but also reveal other structured, semantic relationships between physical state visual meanings and mental states.

## The claims

A unified account of the ways in which idiomatic meanings denoting physical state acts of vision extend to mental state meanings involves both metonymy and metaphor. I adopt Croft's (1993:348) definition of these tropes: 'metaphor is a mapping between two domains that are not part of the same matrix ... In metonymy ... the mapping occurs only within a domain matrix'. In the idioms under examination, we understand all verbal meanings in which a physical act of vision is expressed by extending the noun eye metonymically to the meaning of one of its characteristic physical functions. My first claim is that one achieves the best account of these idioms by construing characteristic physical function as (a) 'see' in the basic sense 'to perceive with the eyes with or without trying' (thus intentionality need not be involved), and (b) 'look' in the basic sense 'to direct one's sight' (thus intentionality is always involved)(CSD, OED: s.v. look, see). The point is usually made that 'to see' is an experience, whereas 'to look (at)' is an activity (Viberg 1983:123). Metonymic construal is unequivocal when the idiomatic meaning expresses a physical act of vision.

My second claim is that the distinction between the basic, (physical) meanings 'see' and 'look' constrains the types of mental state meanings that develop metaphorically in that verbs metonymically meaning 'see', in the basic sense, may extend metaphorically to epistemic meanings such as 'know', as predicted; but that verbs metonymically meaning 'look', in the basic sense, do not. Rather when the latter develop mental state meanings, these are drawn from one or a combination of the following categories: (A) of mental focus and preparedness ('be attentive (to); notice; be alert; be perceptive; become familiar with; remain in practice/form; (to do) with a view to, with a design upon, for the sake of something else; have as one's object; with reference to'); (B) of judgement ('to be a (good) judge of; judge'), and (C) of desiderative modality ('be interested only in; take a liking to/dislike; want').

The most convincing evidence for my second claim comprises entries in which both physical and mental state meanings are expressed overtly either as polysemes or as paraphrases in which a morphologically unrealized mental state qualifies a (metonymic) physical state meaning. These pairings comprise examples from each mental state group. Additional evidence comes from entries in which only mental states appear, these being just those in categories A, B, and C. If one were to construe the latter entries metonymically, then their physical meaning would be 'look' and not 'see'.

## Discussion of data

Idioms in Group 1. The function of the idioms in Group 1 (Table 1) is attributive; they ascribe properties to a human being via a physical, description involving the eye or the area around the eye, its appearance, its movement and its function. Properties expressed in the idiomatic meanings of the starred items do not bear on my thesis; and I shall say no more about them except to remark that they tend to be highly subjective in meaning and, in this respect, more closely related to desiderative (Group B) than to epistemic mental states. In idiom 8, eye in the metaphor half an eye means 'power of vision' and implicitly pairs with 'see'. No mental state meanings develop.

The following items in Table 1 are relevant to my thesis. Three entries exhibit overt polysemies of physical and mental

| | Group 1 Idioms | Physical state | Mental state |
|---|---|---|---|
| 1. | be all eyes | | A |
| 2. | be up to one's eyes in debt/work/sthy | * | * |
| 3. | have a black eye | * | * |
| 4. | have/got/with a roving eye | L | |
| 5. | have/got a (good)/an eye for | | B |
| 6. | have/got an ear/eye/nose for the main chance | | A |
| 7. | have bags under one's eyes | * | * |
| 8. | have but half an eye | S | |
| 9. | have eyes bigger than one's stomach | * | * |
| 10. | have eyes in one's head | L | A |
| 11. | have eyes in the back of one's head | S | E |
| 12. | have eyes only for | L | C |
| 13. | have the eye of (a painter) | | A |

Table 1. Distribution of physical and mental state meanings of Group 1 idioms, whose function is ascriptive

Key to abbreviations in all tables:
*Starred meanings: not relevant to the thesis
Mental state meanings:
A = Group A (Mental focus and preparedness)
B = Group B (Judgement)
C = Group C (Desiderative modality)
E = Epistemic
Physical state meanings: L = 'look'; S = 'see'

states: in 10 physical state 'notice' (here a hyponym of 'look') pairs with 'be observant' (Group A); in 11 'see' pairs with 'aware', an epistemic state; and in 12 'look' pairs with 'want, give attention to, be interested only in' (Group C). In 4 a monosemous physical state 'look' is explicitly exhibited. Only mental state meanings appear in idiom 1 'be attentive' (Group A); in 5 'judge' (Group B); and in 6 'take a mercenary view, be alert to ways of profit" (Group A). Items 1 and 6 would pair with 'look' if the idiom were construed metonymically; the meaning of 5, 'judge', implies physical 'look'.

Idiom 13, have the eye of (a painter), means that one 'has the faculty of perception that characterizes a successful painter'. Metonymy accounts for the extension of eye to characteristic function, 'look' is unequivocally involved; and although the paraphrase does not include 'see', the type of skill this idiomatic meaning captures is nearly always the result of specialized knowledge. Typically, however, the person of whom the idiomatic meaning is ascribed lacks this knowledge, but has the faculty of perception (Group A).

Idioms in Group 2. The function of the idioms in Group 2 (Table 2) is to describe ways in which paralinguistic meaning is expressed by action of or to the eyes. All of the meanings are unequivocally interpersonal: they express feelings and/or personal

| | Group 2 Idioms | Physical State | Mental State |
|---|---|---|---|
| 14. | (not) bat an eye(lid) | * | * |
| 15. | black(en) sb's eye (for him) | * | * |
| 16. | cock an eye at | L | |
| 17. | cry one's eyes out | * | * |
| 18. | get the eye 1,2 | L | C |
| 19. | have/make one's eyes stand out of one's head | * | * |
| 20. | give sby the eye 1,2 | L | C |
| 21. | give sby the evil eye | L | C |
| 22. | give sby the glad eye | L | C |
| 23. | hit between the eyes | * | * |
| 24. | make eyes at | L | C |
| 25. | make sby open (her/his) eyes | L | |
| 26. | meet sbys eyes | L | |
| 27. | pull the wool over somebody's eyes | * | * |
| 28. | roll one's eyes | * | * |
| 29. | scratch sby's eyes out | * | * |
| 30. | screw up one's eyes | * | * |
| 31. | spit in sby's eye | * | * |

Table 2. Distribution of physical and mental state meanings of Group 2 idioms, whose function is predominately interpersonal For key to abbreviations, see Table 1.

evaluations. The meaning 'see' is not implied, nor does it appear as an idiomatic meaning; and as predicted, extensions to intellection do not appear. Starred items do not bear on the thesis. However, in all cases in which an act of vision is involved in the idiomatic meaning (16, 18, 20, 21, 22, 24, 25, 26), the visual act is that of 'look' or being 'looked at' in a conventionalized way that expresses affectivity. Extensions to mental state meanings in Group C are encoded as qualifiers of 'look' but have no morphological realization in 18 'to be looked at with interest, liking' or conversely, 'in a cold, unfriendly way'; and in 24 'to make appealing glances at, flirt'. Idiom 20 is the converse of 18. In 21 and 22, the affective/evaluative qualifiers are morphologically expressed.

Idioms in Group 3. All items in Group 3 bear on my thesis. In Table 3, idioms 32 and 33 are paraphrased with 'see'; and 'see' is implied in the lack of intentionality that is expressed in 34 and 35. In all four idioms of Group 3A, it is as though visual perception takes place simply in virtue of possessing normal vision and the circumstances in which vision may occur. Metaphoric extension to mental states does not appear.

In the idioms in Group B of Table 3, in which the perceiver performs an action which precludes visual perception (36, 38) or changes (37) or questions (39) a percept, all occurrences of *eye* extend metonymically to 'see', and metaphoric extension to

| Group 3A Idioms | Mental State |
|---|---|
| 32. clap/set/lay eyes on | |
| 33. his/her eye fell upon | |
| 34. meet one's eye | |
| 35. catch (someone's) eye | |
| Group 3B Idioms | |
| 36. close/shut one's eye to | E |
| 37. open one's eyes | E |
| 38. turn a blind eye to | E |
| 39. (not) believe/credit (the evidence of) one's eyes | E |

Table 3. Distribution of mental state meanings in Group 3A and 3B idioms meaning 'see'
For key to abbreviations, see Table 1.

knowledge appears overtly in the paraphrases of idioms 37 and 39. Idiom 39 means 'not believe what one sees, not trust one's eyesight, not sure of seeing something'. Here, the meaning of intellection is expressed in the verb itself; but significantly the physical state, idiomatic meaning is paraphrased with 'see'. Idiom 38 means 'pretend not to see' or 'deliberately ignore'. The meaning 'ignore' which is expressed overtly in 38 and is hinted at in 36 may mean 'to refuse to acknowledge what one knows'. Idiom 36 means 'refuse to see or think about' and 'to ignore'. In each case, physical state 'see' and an epistemic mental state meaning are paired.

All meanings in Group 3C (Table 4) explicitly extend metonymically to 'look' or to some hyponym such as 'watch' and 'notice' (in the relevant sense), or would so extend if they were construed metonymically as physical acts of vision. In these idioms, either a perceiver initiates the act of vision, or the perceiver's vision is elicited. The following have overt polysemous physical and mental state meanings or physical state meanings which are qualified by mental states: in 46 'look' is paired with 'pay attention to', 'to have as one's object' and 'to have reference to' (Group A); in 48 'watching appears coordinately with 'making judgements' in a monosemic meaning (Group B); in 49 'notice [visually]' is paired with 'take a liking to' (Group C); in 51 and 58 'watchful' is paired with 'remain alert' (Group A). Idiom 62 *rivet one's eyes*, means 'to look at with complete attention and fascination', the mental state meanings deriving from the meaning of *rivet*. Similarly, idiom 42 *feast one's eyes upon* means 'look at and enjoy very much', the desiderative meanings coming from *feast*.

The following items in Table 4 exhibit only physical

| Group 3C Idioms | Physical State | Mental State |
|---|---|---|
| 40. (sthg) catch one's eye | L | |
| 41. cast/run an/one's eye over | L | |
| 42. feast one's eyes upon | L | |
| 43. fix one's eyes upon | L | |
| 44. get one's eye/hand in | | A |
| 45. give an ear/eye to | | A |
| 46. have an eye for | L | A |
| 47. have/got an eye to (doing) sthg | | A |
| 48. have one eye on | L | B |
| 49. have one's eye on | L | C |
| 50. have/get one's eye (well) in (Sport) | | B |
| 51. have one's eyes about one | L | A |
| 52. keep an/one's eye on | L | |
| 53. keep an eye open/out for | L | |
| 54. keep an/one's eye on | L | |
| 55. keep one eye on | L | |
| 56. keep one's eye/hand in | | A |
| 57. keep one's eyes off | L | |
| 58. keep one's eyes/ears open | L | A |
| 59. keep one's eyes peeled/skinned | L | |
| 60. keep a weather eye open | | A |
| 61. pass one's eyes over | L | |
| 62. rivet one's eyes on | L | A,C |
| 63. take one's eye off | L | |

Table 4. Distribution of physical and mental state meanings in Group 3C idioms, which mean 'look' (or hyponym) or which, if having only mental state meaning(s), would mean 'look' if construed metonymically. For key to abbreviations, see Table 1.

meanings which either imply 'look' or have idiomatic meanings which overtly paraphrase with 'look', 'watch' or 'notice visually': 40, 41, 42, 43, 52, 53, 54, 55, 57, 59, 61, 62, 63. Of those having only mental state meanings, 44, 45, 47, and 60 pattern with Group A; 50 patterns with Group B.

Idiom 56. *keep one's eye/hand in* means 'remain in form/practice' (Group A). I wondered whether intellection could be involved. However, notice that the idiom contains *in* which, as a particle in phrasal verbs such as *count someone in* and *want in*, expresses 'involvement with activities' (Cobuild, p. 467). This would seem to be the meaning of familiarity and of practice that is encoded and not expressly intellection. Harrup's cites a game of darts as its exemplum: here 'look' is the relevant physical state metonym. If this metonym extends implicitly or contextually to 'knowledge', then it is the closest to a counterexample that these data contain.

## The figurative meanings

As we have seen, idiomatic verbs of vision which metonymically mean 'see' may extend metaphorically to epistemic mental states, whereas those meaning 'look'--the vast majority--may extend to mental states of mental focus and preparedness, of judgement, and of desire. The pattern of meanings of 'look' idioms may also be found in the phrasal verb *to look at* which encodes nearly all of the mental states of 'look' idioms and which also does not extend metaphorically to intellection. Moreover, the meaning of the verb *to eye* which once meant 'to see' (OED 1583-1779 Obs.) now expresses the meaning 'to look at or upon'. It is unlikely that the noun *eye* in these idioms is a deverbal noun, since the nominal form is attested as early as 700, the verb not until the 16th century (OED). Idioms with noun *eye*, a rare example being attested as early as c975 but with developmental clustering in the 14th and 15th centuries, may have developed to express subjective control of its function. Diachronic change to greater subjectivity is well-documented (Traugott Forthcoming).

That is, if one seeks principled motivation for metonmyic extension and accepts the view that a functional effect of metonymy is not only shift of reference but also domain highlighting (Lakoff & Johnson 1980:36, Lakoff & Turner 1989: 103-4 , Croft 1993:349), then in idioms in which a physical act of vision is encoded, what is highlighted in the domain matrix of 'eye' is characteristic physical function. Explicit syntagmatic expression of a verb and of prepositional modifiers makes unequivocal the extent and nature of the perceiver's control of the act of vision. Truthconditionally close, encapsulated meanings, such as 'watch' whose syntagmatically extended idiomatic partner is 'keep one's eye on,' do not make salient the subjective control of the perceiver. The two expressions may also differ in stylistic register, the idiom usually being more informal. And in this pair, the meaning of the idiom, 'keep a close watch on', is more specific.

What motivates the metaphoric mapping from the metonymic, physical source domain to a mental state target domain? In the case of mental state Groups A and B, the motivation is both substantive resemblance of intentional control and iconic resemblance between physical sequence and mental sequence. That is, mental states in group A exhibit mental control, just as 'look' exhibits physical control; moreover, just as 'look' precedes 'see' in physical vision, so mental states in A may be precursors to knowledge. Judgement (Group B) involves deliberation, a mental 'looking at' that is sometimes highly subjective. Significantly, the attitudes in (C) are subjective; whereas, as Sweetser (1990: Ch. 2) explains, epistemic attitudes that develop from 'see' are objective. Objective (epistemic) attitudes, which may be indifferent to intentionality, pair with 'see'; subjective attitudes, which are not indifferent to one's will, pair with 'look'.

All figurative meanings are consistent with a locative schema in which vision is structured as a journey (Lyons 1977:700, 701). Aspectual meanings contributed by the verbs, and prepositional meanings are understood as spatial conceptions that may also structure abstract domains. Whether aspectual categories and prepositional meanings are not just metaphorically but also actually spatial is a vexed question (Jackendoff 1983: esp. Ch.9.1, Brinton 1989). That prepositions may denote such locative notions as places and paths, both of which may be constituents in a journey schema, remains unaffected by one's position on this question.

The mental state meanings in Group A, such as '(to do) with a view to, with a design upon, for the sake of something else; have as one's object; have reference to', are mental points of orientation (source) from which or in terms of which the percept (destination) is observed. The meanings 'be attentive to, notice, be alert, be perceptive, become familiar with, keep in form/practice' are mental attitudes/habits that enable one to achieve a goal/destination. The desiderative modalities in C and the attitudinal component in B are subjective attitudes that motivate goal driven behaviour and that reflect the viewer's opinion of the percept (goal/destination): 'point of view' is both physical and attitudinal. I shall not repeat the able account Sweetser (1990:Ch. 2) has given with respect to the metaphoric relationship between 'see' and 'know', except to say that it is fully applicable to idioms of vision which mean 'see'.

Thus, just as semantic relationships between physical acts of vision and mental state meanings are highly structured in nonidioms, so they are in these idioms. Just as metaphor and metonymy may interact in the interpretation of nonidiomatic constructions (Lakoff & Turner 1989:100-106, Goossens 1990, and Croft 1993:363), so also in verbal idioms of visual perception.

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# CONTRASTS IN KOREAN

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The following English sentences are different only in the use of the conjunction marker 'and' and 'but'. They have very similar meaning in terms of contrast.

(a) I had planned to spend $300 dollars for Christmas shopping, and I haven't spent a bit.
(b) I had planned to spend $300 dollars for Christmas shopping, but I haven't spent a bit.

This paper seeks to identify the differences in meaning between such sentences as the above, and the different ways of establishing contrasts in Korean and Japanese. There are two kinds of contrast: semantic and pragmatic contrast. Pragmatic contrast occurs when there is a clash between the speaker's belief and the asserted facts. Semantic contrast occurs when there is an inherent contrast between two predicates or two participants in two separate clauses. I will identify five different kinds of contrast; that is, three semantic (semantic contrast between two verbs, between two objects, comparisons) and two pragmatic contrasts (negative vs positive contrast, presupposition contrast). The following are some examples of these types of contrast.

## I. Semantic Contrast

### I.1. Verb contrast

1. John *is* there, but Mary *is not*

2. a. Hyeng-i khi-ka khu-ciman tongsayng-un khika cakta.
elder brother-sm height-sm tall-but, younger brother short
'The elder brother is tall, but the younger one is short.'

b. Hyeng-i khi-ka khu-ko tongsayng-un khika cakta.
elder brother-sm height-sm tall-and, younger brother short
'The elder brother is tall, and the younger one is short.'

In sentences (1) and (2), predicates 'is' and 'is not' and 'tall' and 'short' are semantically opposed and the subjects are different. This is the most typical contrastive sentence.

### I.2 Object Contrast

3. a. John likes *baseball*, but Mary likes *soccer*.
b. John likes *baseball*, and Mary likes *soccer*.

In sentence (3 a) and (3 b), the verbs of the first clauses and the second clauses are the same *chohahata* 'like', but the subjects and the objects are different, 'John' and 'baseball', and 'Mary' and 'soccer'.

4. John-un meki-rul coaha-ciman Mary-nun nolki-rul coahanta.
John-tp eating-om like-but, Mary-tp play-om like
'John likes to eat, but Mary likes to play.'

5. John-un meki-rul coaha-ko Mary-nun nolki-rul coahanta.
John-tp eating-om like-and, Mary-tp play-om like
'John likes to eat, and Mary likes to play.'

### I.3 Comparative Contrast

6. a. simcang-un bulkunsayk-i-ko kan-un kkamansayk-i-ta
heart-tp red color-be-and liver-tp black-be-ind
'The heart is red colored, and the liver is black.'

b. simcang-un bulkunsayk-i-ciman kan-un kkamansayk-i-ta
heart-tp red color-be-but liver-tp black-be-ind
'The heart is red colored, but the liver is black.'

7. a. The elder sister is pretty, and the younger one is cute.
b. The elder sister is pretty, but the younger one is cute.

Sentences (6) and (7) have two verbs which are semantically different although they are not antonyms or synonyms. 'Being pretty' and 'being cute' are used contrastively here.

## II. Pragmatic Contrast

### 2.1 Negative/ Positive value contrast

8. a. John-un cal sayngyet-ciman kenkang-i yakhata.
John-tp well shaped-but, health-sm weak
'John is handsome, but he is not healthy.'

9. Mary is not good in studying, but she is a good girl in manners.

In (8a) and (9), the subjects of two clauses are the same, but the contrast between the first clause and the second clause derives not from the semantic contrast between the two clauses, but from the pragmatic context. In (8a), the contrast between 'being handsome' and ' having bad health' are not semantically in contrast with each other; in other words, they are not antonyms, but in the speaker's mind they are in opposition. People usually think 'being handsome' is good, but 'bad health' is bad. The same reasoning is applied to (9), people usually think 'poor in studying' is bad but 'nice behavior' is good. Therefore this kind of contrast is negative vs positive. However, the second clause does not contrast directly with the expectation of the first clause; it is just contextually contrastive in a positive or in a negative way. Thus if the conjunction is 'and' instead of 'but', the meaning of the sentence is not contrastive.

8 b. John-un cal sayngyet-ko kenkang-i yakhata.
John-tp well shaped-and, health-sm weak
'John is handsome, and he is not healthy.'

The meaning of the sentence (8b) is not similar to (8a) which has the contrastive meaning.

2.2 Presupposition

10. kyewul-i-ciman nwun-i oci annunta.
winter-be-but, snow-sm come not
'It is winter, but it does not snow.'

11. palan pul-i-ciman, cha-ka an-kanta.
green light-be-but, car-sm not-go
'It is green light, but the car does not move.'

In (10) and (11), the second clause contradicts the expectation of the first clause. Example (9) has an expectation like 'There is snow in the winter.' and (11) has the expectation like 'The car should move when there is a green light.', but the second clause contradicts the established expectation in each case. However, if the conjunction is 'ko (and)' the meaning is unacceptable. Let's consider the following pragmatic contrast example.

12 a. kwurwum hancem ep-ciman, pi-ka o-nta.
cloud one not-but rain-sm comes.
'There is no cloud at all, but it is raining.'

b. ?kwurwum hancem ep-ko, pi-ka o-nta.
cloud one not-but rain-sm comes
?'There is no cloud at all, and it is raining.'

13 a. I ate a lot, but I am hungry.
b. ?I ate a lot and I am hungry.

Sentence (12 a) is fine. Since if there is no cloud, no rain is expected; however, it is raining, it contradicts the speaker's expectation. Therefore the conjunction used is jiamn 'but'. Sentence (12 b) is syntactically grammatical, but semantically unacceptable, since it uses the conjunction ko 'and'; and ko operates without contradicting an established expectation. Sentence (12 b) is possible only in an imaginary world. Sentence (13 a) is fine, since I ate a lot, I am supposed to be full, but I am still hungry, so it is contrastive. (13 b) is not acceptable, without 'still' because the second clause contradicts the expectation of 'being full.' Thus using 'and' is questionable/odd here.

10 b. *kyewul-i-ko nwun-i oci annunta.
winter-be-ko, snow-sm come not
'It is winter, and it does not snow.'

11 b. *palan pul-i-ko, cha-ka an-kanta.
green light-be-and, car-sm not-go
'It is green light, and the car does not move.'

As shown above, the ko (and) conjunction cannot be used in pragmatic contrast and can be used in semantic contrast, but ciman or edo (but) can be used in all adversative cases either semantic or pragmatic. The following diagram shows this:

| semantic contrast | pragmatic contrast | |
|---|---|---|
| | positive and negative | presupposition |
| **ko (and) clause**<br>**ciman (but) clause** | **ciman (but)clause** | **ciman (but) claus** |

However, in non-contrasting cases, the contrastive conjunction 'but' cannot be used at all.

Let's consider the following example where 'but' can not be used as a conjunction marker when there is no contrast.

14 a. *Jack-i khi-ka khu-ciman John-i khika khuta.
Jack-sm height-sm tall-but, John-sm tall
*'Jack is tall, but John is tall.'

b. Jack-i khi-ka khu-ko John-i khika khuta.
Jack-sm height-sm tall-and, John-sm tall
'Jack is tall, and John is tall.'
[ 'sm' means subject marker]

Sentence (14 a) is unacceptable but (14 b) is acceptable, because the first clause and the second clause share the same verb, and the same object, and they do not contradict; thus using the adverse conjunction marker *ciman* 'but' makes the sentences odd. However, in (14 b) *ko* is acceptable. This example shows that the contrast conjunction cannot be used where contrast can not be sensibly inferred. The following diagram summarizes where the conjunctions 'and' and 'but' can be used.

| non-contrast | semantic contrast | pragmatic contrast |
|---|---|---|
| and | and, but | but |

The reason that the non-contrastive conjunction 'and' can be used in environments where contrast is inferable is that the contrastive meaning is obvious from the two contrasting constituents. However, in case of pragmatic contrast, especially in presupposition, the contrastive meaning is not obvious; only with the help of the contrast conjunction 'but' will the meaning be conveyed. Using the 'continuous flow marker' *ko* (Korean 'and') is not acceptable. In other words, the semantic contrast is in the sentence, and the contrast is obvious, so using either *ko* or *ciman* both are possible. However, if there is a pragmatic contrast, using *ko* is impossible, since *ko* does not have the adverse meaning by itself. Thus using the non-contradictory conjunction is unacceptable. So it is obvious that contrastive conjunction 'but' is used only in contrasting cases, but the non-contrastive conjunction 'and' can be used in non-contrastive cases as well as some contrasting cases. Let's consider the following example.

14. a. *Jack-i khi-ka khu-nte John-i khika khuta.
Jack-sm height-sm tall-but, John-sm tall
*'Jack is tall, but John is tall.'

b. Jack-i khi-ka khu-ko John-i khika khuta.
Jack-sm height-sm tall-and, John-sm tall
'Jack is tall, and John is tall.'

15. a. *The elder brother is tall but the younger brother is tall.
b. *The elder brother is tall and the younger brother is tall.
c. The elder brother is tall and the younger brother is tall too.

16. a. *Hyeng-i khi-ka khu-nte tongsayng-i khika khuta.
elder brother-sm height-sm tall-but, younger brother-sm tall
*'The elder brother is tall, but the younger one is tall.'

b. *Hyeng-i khi-ka khu-ko tongsayng-i khika khuta.
elder brother-sm height-sm tall-and younger brother-sm tall
*'The elder brother is tall, and the younger one is tall.'

c. Hyeng-i khi-ka khu-ko tongsayng-to khika khuta.
elder brother-sm height-sm tall-but, younger brother-also tall
'The elder brother is tall, and the younger one is tall also.'

Sentence (15 a) and (15 b) are ungrammatical, but (15 c) is grammatical. 'Too' is more to be expected in (15 b) than in (14b). The reason that (15 b) is more acceptable than (14 b) or (16 b) is , according to Kaplan (1984), that the function of 'too' is to emphasize differences between contrasting constituents. Thus 'Jack' and

'John' are less contrastive than 'the elder brother' and 'the younger brother' since 'Jack' and 'John' do not have the contrasting family relationship of 'the elder' and 'the younger.' Thus (16 b) or (15 b) contains more contrasting clauses than (14 b), thus (15) needs 'too.' Sentences (15 a), (16 a), and (14 a) are all not grammatical because of 'but.' This shows again that 'but' can not be used in a non-contrasting case.

Above examples (14), (15) and (16) show that the conjunction 'and' does not have contrastive meaning itself. However, 'but' has contrastive meaning itself, since (14 a), (16 a), (16b), (15 a), and (15 b) are not grammatical. Let's reexamine sentence (2). If the conjunction 'and' does not indicate contrastiveness, then where does the contrast of the clauses in sentence (2 a) come from? It comes from the contrasting constituents. I believe that the contrast comes primarily from the lexical contrast. That is why the non-contrast conjunction marker 'and' is used as a conjunction marker in the semantic contrastive cases, because the contrastive meaning can be conveyed from the lexical antonyms. However, in the pragmatic contrast case, using 'ko' is not possible, because the contrast is not from the lexical juxtaposition, but from the subtle context, or expectation. Thus to convey the contrastive meaning clearly, it needs help from another contrastive conjunction 'but' as a conjunction. Thus the second clue for the contrast is the contrastive conjunction 'but'.

The lexical contrast and the contrastive conjunction nunte 'but' are the two main tools to convey the contrastive meaning in Korean. However, in Korean there is another tool of 'contrast'. That is the use of the 'contrast marker' nun. The Korean topic marker nun (Japanese wa) has two functions: topic and contrast. According to Li and Thompson (1976), Korean and Japanese are subject and topic prominent languages (type 3). In Korean, -i / ka is called the subject marker, ( -i is used after a consonant and -ka is used after a vowel.), and un/nun is referred to as the topic marker (-un appears after a consonant and -nun after a vowel.). The topic and subject markers both normally occur in sentence initial position after the noun, and it is sometimes difficult to identify the semantic contrast which accompanies the occurrence of the one or the other. The Korean topic marker nun is recognized as a contrast marker as well as topic marker in discourse. According to D.W. Yang (1973: 117), 'contrastive' means singling out one object or event to be focused out of a set of more than one object or event, which the speaker presupposes to exist as possible candidates for the assertion being made of the focused object or event. In other words, the speaker presupposes the existence of sister members in contrast with the nun-attached element. The topic marker nun's primary function is the marking of a contrastive relation between the nun-bearing element and some other element and the marking of a thematic element.

In Korean, there are sentences which have the subject marker instead of the topic marker in 'and' conjoined sentences and 'but' conjoined sentences. Consider the following example:

17. a. John-un khi-ka khu-*ko* Mary-nun khi-ka cakta.
John-tp height tall-and Mary-tp height-sm small
' John is tall and Mary is short.'

b. John-un khi-ka khu-*cinan* Mary-nun khi-ka cakta.
John-tp height tall-but Mary-tp height-sm small
'John is tall but Mary is short.'

c. John-i khi-ka khu-*ko* Mary-ka khi-ka cakta.
John-sm height tall-and Mary-sm height-sm small
'John is tall and Mary is short.'

(17 a) has the topic marker in 'and' conjoined clauses and (17 c) has the topic marker in both clauses. The clauses in the sentences using the topic marker are more contrastive than those using the subject it marked. This is supported by the following example:

18. a. *Jack-un khi-ka khu-ko John-un khika khuta.
Jack-sm height-tp tall-and, John-tp tall
*'Jack is tall, and John is tall.'

b. Jack-i khi-ka khu-*ko* John-i khika khuta.
Jack-sm height-sm tall-but, John-sm tall
'Jack is tall, and John is tall.'

In (18 a), using the topic marker 'nun' makes the sentence unacceptable because the hearer expects some kind of contrast between Jack and John, and there is no contrast at all there. Thus it is clear that the subject marker can not be used for the contrastive meaning carrier, but the topic marker can.

According to Patricia Clancy and Pamela Downing (1987: 26), this is true in Japanese too. In Japanese, The function of 'wa' (Korean equivalent *nun*) is to mark the contrast as well as the topic. According to Noriko Ueno, the original form of 'wa' in old Japanese is 'ha' and the function of 'ha' was to convey some degree of contrast /differentiation. The topic character of 'wa' developed later. For example:

.... de okaasan wa ..wa ne,... monosugoku...sono
and mother TP TP EX very much that

ikurachan no.. itte iru koto wakaru n desu tte ne,
Ikura SB saying is thing understand NOM COP QT EX

... hoka no kodomotachi wa, zenzen wakannai
other LK child-PL TP completely don't understand

(And the mother says she understands very well what Ikura is saying; the other children don't understand at all.) [ Clancy and Downing: 27]

Here the mother's ability to understand the speech of her child, Ikura, is being contrasted with the inability of the others to understand, and both the mother and the others carry 'wa's that can be characterized as 'contrastive'. Like Korean, Japanese has 3 types of contrasting sentences.

19. a. ani-ga se-ga takak-u otouto-ga
The elder one-sm height-sm all-and the younger one-sm
se-ga hikui
height-sm short
'The elder brother is tall and the younger one is short.'

b. ani-wa se-ga takak-u otouto-wa
The elder one-tp height-sm tall-and the younger one-tp
se-ga hikui
height-sm short
'The elder brother is tall and the younger one is short.'

c. ani-wa se-ga takaki-ga otouto-wa
The elder one-tp height-sm tall-but the younger one-tp
se-ga hikui
height-sm short
'The elder brother is tall and the younger one is short.'

Thus there are three basic contrast patterns in conjoined clauses in Korean and Japanese:

1. s1+sm .......and s2+sm......
2. s1+tp.........and s2+tp........
3. s1+ tp.......but s2+tp.........

Pattern 1 takes the subject marker and *ko* 'and' and the pattern 2 takes the contrast marker nun and *ko* 'and,' while pattern 3 takes contrast marker nun and *ciman* 'but' as their contrastive message carriers.

What is the difference between the above three types of sentences 1, 2 and 3? The first type of sentence is normally used in the following context.

Context: There are two brothers in Mr. Kim's family, Jack and John. Someone who knows two brothers asks Mr. Kim about their height.

20. Q. nwu-ka khu-ko nu-ka cak-ayo?
who-sm tall-and who-sm short-question?
'Who is tall and who is short?'

A. Jack-i khu-*ko* John-i cak-ayo.
Jack-sm tall-and, John-sm short-ind
'Jack is tall, and John is short.'

The following sentence is not acceptable in Korean.

21. Q. *nwuku-nun khu-ko nwuku-nun cak-ayo?
who-tp tall-and who-tp short-question?
'Who is tall and who is short?'

The topic marker nun cannot be used to request new information like with 'who'. (20 A) type sentences indicate more quotative, indicative or descriptive ways of contrast. If the trade deficit between Japan and the U.S. is just described as statistics and does not have strong intention of contrast, then the subject marker is more likely:

22. Japan-i hukcai-*ko* Mikwuk-i cekcata.
Japan-sm gain-and The U.S.-sm loose
'Japan is gaining but the U.S. is loosing (in balance of trade).'

The second type of sentence is used most frequently when Korean speakers want to make a semantic contrast. The lexical opposition plus the use of the contrast marker nun makes the sentence contrast. The contrastive effect is enhanced if both participants in the opposition have roughly equal thematic status. If both participants are considered to be on a par and equally presented in the speaker's mind, the speaker chooses parallel labels for them. To describe parallel but contrastive activities or equal thematic status, the speaker chooses nun as a contrast maker for both participants. Consider the following example:

23. Jack-un khu-*ko* John-un cak-ta
Jack-tp tall-and, John-tp short-ind
'Jack is tall, and John is short.'

Here Jack and John have equal and parallel thematic status. Thus in this 2nd type, 'and' conjoined sentences have equal focus on both clauses.

The third type of contrast uses the contrastive conjunction marker ciman 'but' as a conjunction marker besides the contrastive marker nun. The focus of the sentence is more in the second clause, and the first clause is taken as a matter of fact. One of the special characteristics of the disjunctive clauses is that they accept the proposition of the first clause as the more undeniably true fact.

24. Jack-un khu-*nte* John-un cak-ta.
Jack-tp tall-but, John-tp short-ind
'Jack is tall, but John is short.'

The speaker considers the tallness of Jack as a fact even though Jack is not so tall in the real world, and the speaker expects Jack to be tall; thus John should be tall too. However, John's height contradicts his expectation. This is clearer in the following example:

25. Hyeng-un khi-ka khu-nte tongsayng-un khika cakta.
elder brother-tp height-sm tall-but, younger brother-tp short

'The elder brother is tall, but the younger one is short.'

Since the elder brother is tall, the younger one should be tall too. However, the expectation meets the contradiction. Thus, lexical antonyms and the contrast marker nun plus contradiction of the expectation are the characteristics of sentence type 3. The speaker expectation of the first clause is that the first clause is true, in his world. That is the reason the untrue fact cannot come in the first clause with the contrastive conjunction ciman 'but'. Consider the following example:

26. a. *hanul-i mwuneci-ciman sosanal kumeng-un issta.
heaven-sm fall down-but spring out hole-tp is
(The sky is falling down but there is a hole to spring up through.)

In (26 a), there is no possibility that the sky is falling down. The conjunction ciman 'but' is not acceptable here. The speaker considers the content of the first clause to be fact, regardless of whether it is really true or not in the real world.

Another characteristic of the adversative complex sentence is that, since the preceding clause is considered as a factual proposition, it is in a sense old information; therefore, the clause that follows it gets the information focus. In other words, the second clause is more prominent. 'But' implies that the facts described in the second clause are unexpected or contrary to the present context. The proposition of the first clause can be true or false in the real world, but the speaker believes that it is true, old, and known information, and the proposition of the second clause is new information.

The speaker also wants to give focus on the second clause, and then on the first clause when he uses the 'but' connected sentence. Consider the following example:

28. a. Hyeng-un khi-ka khu-nte tongsayng-un khika cakta.
elder brother-tp height-sm tall-but, younger brother-tp short
'The elder brother is tall, but the younger one is short.'

28. b. tongsayng-un khi-ka cakun-nte hyeng-un khika khuta.
younger brother-tp height-sm short-but, elder brother-tp tall
'The younger brother is short, but the elder one is tall.'

In (28 a), the expectation is the younger brother should be tall since the elder one is tall, but contrary to the expectation, the younger one is short. In (28 b), the expectation is that the elder one should be short, since the younger one is short; but the elder one is tall. Thus the focus in the clause is different, and the second clause gets the focus of the conversation.

In the type 3 sentence, if the first clause is conditional or concessive clause to the second clause, the first participant looses nun marking and takes ka marking instead. For example, one of the Korean contrastive conjunction markers -edo is used with the meaning 'but' and sometimes used with the concessive meaning 'even though or although'. Consider the following example:

29. a. Jack-un ice cream-ul cohahay-do na-nun ice cream-ul silehanta.
Jack-tp ice cream-om like-but I-tp ice cream-om don't like
(Jack likes ice cream, but I do not like it.)

b. Jack-i ice cream-ul cohahay-do na-nun ice cream-ul silehanta.
Jack-sm ice cream-om like-but I-tp ice-cream-om don't like
(Even though Jack likes ice-cream, I do not like it.)

In (29 a) the assumption is that if Jack likes ice cream, then John likes ice cream too, because Jack has a big influence on John to like ice cream. However, under the condition that Jack likes ice cream, John still does not like ice cream. In (29 b), although Jack likes ice cream (there is a possibility that Jack does not like ice cream), John still does not like ice cream. Thus the sentence (26 a) is grammatical if the conjunction is the concessive conjunction -do/-edo (after consonant).

26. b. hanul-i muneci-edo sosanal kumeng-un issta.
heaven-sm fall down-but spring out hole-tp is
(Even though the sky is falling down, there is a hole to spring up.)

Another noticeable factor is the change of the topic marker in the first clause to the subject marker -ka. The topic/ contrast marker nun cannot be used in the subordinate clause. This feature again shows that (18b) is not a contrasting clause.

The degrees of contrastiveness is progressively stronger from type 1. to 3., since type 1 is used only with lexical antonyms, and type 2 is used with lexical antonyms plus the contrast marker nun, and type 3 is used with lexical antonyms plus the contrastive marker nun plus the contrastive conjunction marker ciman 'but'.

I believe that these degree of contrast can exist in other languages as well. Japanese has almost the same construction as Korean. In English, I believe, the same degrees of contrast can be achieved by 'contrastive stress.' Consider the following example:

30. a. JACK is tall and JOHN is short. :Subject contrast
b. Jack is TALL and John is SHORT. :Predicate contrast
c. JACK is tall but JOHN is short. :Subject contrast
d. Jack is TALL but John is SHORT. :Predicate contrast

Sentences (30 a ) and (30 b) show the contrasts between two constituents using 'contrastive stress', and these correspond to the Korean pattern 2 that has the topic marker. Sentences (30 c) and (30 d) correspond to Korean pattern 3, that has the topic marker and the conjunction ciman 'but'. Thus depending on the stress, the contrast degree is varied. It is roughly represented by the following diagram.

non-contrast contrast
¦________________________________________________¦
and *stress and stress* but *stress but stress*

However, evaluating contrastive stress is a very difficult task. The difficulty is amply illustrated by the literature on contrastive stress in English (Bolinger 1972; Schmerling 1976; Ladd 1978).

## Summary

This study concentrates on the semantic contrast area, where conjunction 'and' and 'but' both are used in contrasting sentences. The reason that both conjunctions are used as contrastive markers is because the primary clue of the contrastive sentence is in the lexical antonyms. Lexical antonyms and the contrastive conjunction 'but' are both used as contrasting markers. However, in Korean, there is another marker to describe contrast. That is the contrast marker 'nun'.

Therefore, in Korean there are two types of 'and' conjoined contrastive sentences. One is asubject marker attached sentence and the other is topic marker attached sentence. 'And' conjoined sentences have equal focus between two clauses, but 'but' conjoined sentences have the prominent focus on the second clause. The 'but' conjoined sentence indicates contradiction of the expectation of the first clause, in addition to containing lexical antonyms. It also indicates a contrast in the participants as represented by the contrast in marker nun. The 'but' conjoined sentence accepts the first clause as a fact; thus if the first clause is untrue, the participant of the first clause loses the contrast/topic marker nun and takes the subject marker ka. This marking is characteristic of the subordinate clause of Korean. In other words the first clause participant loses its equal status to that of the second participant, and recedes to the background. We have thus established the boundary between the contrasting sentence and the concessive or conditional clause.

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# VI

# DISCOURSE ANALYSIS AND PROCESSING

# CLASSICAL RHETORICAL DEVICES AND CONTEMPORARY DISCOURSE PROCESSING THEORY*

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## Rhetoric and discourse research

Classical rhetorical theory, which dates back to the ancient Greeks, has long since faded into obscurity. Today, for most of us, if we think about rhetoric at all, we tend to do so dismissively -- disregarding it as ornate, persuasive, artificial language, the sort of language politicians use. Indeed, rhetoric is not usually considered a prime target for linguistic investigation. This paper suggests, however, that classical rhetorical theory is, in its roots, cognitively based, and as such, it can offer valuable insights to discourse research.

This discussion focuses on the cognitive basis of classical rhetorical devices, and how linguistic forms of the rhetorical device type function in ordinary natural language to code discourse prominence. The first part of the discussion will look at the cognitive salience of rhetorical devices. The second part will draw a link between this salience and discourse prominence, and will show that discourse prominence can be accounted for by a cognitively based discourse strategy -- a prominence strategy that plays a critical role in conveying important information during both the comprehension and the production of language.

## Classical rhetorical theory and rhetorical devices

Around about fifth century BC, the Greeks began to question what made some modes of speech more successful than others; they began a rather intensive investigation into the matter. Unfortunately, we have no complete documentation of this early research. However, we do have the classical rhetorics, such as Aristotle's *Art of Rhetoric*, and in these we can see something of the underlying motivations behind the language usage that the rhetorics prescribe. If we subject these rhetorics to close scrutiny, we find that these early researchers were quite aware of communication variables that affect comprehension, especially those

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* I am grateful for travel assistance provided by the Marie Louise Imrie Graduate Student Award, the Faculty of Graduate Studies and Research, and the Vice-President (Research) of the University of Alberta. I am grateful also to my dissertation supervisor, Gary D. Prideaux, for his advice on this paper, and for travel assistance provided through his SSHRC grant. I would also like to thank the Issak Walton Killam Trust which has supported a portion of my research.

variables associated with memory and attention. We find that, essentially, rhetorical usage is based on the thesis that one can manipulate factors that affect comprehension to produce a maximally communicatively effective message.

Now, all of this is especially significant for modern discourse research. The production and comprehension of discourse are subject to the *same* sorts of variables -- most notably those associated with memory and attention. It should not be too surprising, then, if the ancient theory of communication should suggest some insights about discourse processing. And indeed, we can see that this is so if we take a close look at classical rhetorical devices.

An analysis of rhetorical devices reveals that they are based on a variety of comprehension effects, for instance:

* *the primacy effect*: what we hear first is well recalled
* *the recency effect*: what we hear last is well recalled
* *the frequency effect*: what we hear frequently is well recalled
* *the deviancy/markedness effect*: what is unusual or unexpected is well recalled

Many rhetorical devices use one or a combination of such effects, thereby producing linguistic forms that are highly salient. By way of illustration, let's look at three examples.

Consider first devices that are based on markedness (i.e., unusual or uncommon forms of linguistic expression), for instance, *polysyndeton* and *asyndeton*. *Polysyndeton* describes a usage in which a coordinating conjunction recurs between successive constituents as in (1):

(1) The northern coast is dry *and* cold *and* barren *and* totally inhospitable.
[markedness]

*Asyndeton* describes a usage in which a coordinating conjunction is omitted between successive constituents as in (2):

(2) He climbed up the tree, over the wall, into the witch's garden.
[markedness]

In both cases, the result is a marked linguistic form. It is the less expected, less common mode of linguistic expression, in that conjunctions are not normally repeated in a series, and neither are they completely absent. The resulting linguistic forms then, carry the potential for a markedness effect.

Consider next, devices based on repetition, devices such as *epimone*. *Epimone* describes the repetition of a constituent throughout a discourse, as in (3):

(3) The United States has *commitments* all around the world . . . we must have the power to make our *commitments* good . . . the United States is serious about its *commitments* . . . it means to meet its *commitments*.
[frequency + markedness]

In this example from a J.F. Kennedy press conference, a lexical constituent is repeated several times. The resulting linguistic form carries the potential for a frequency effect. In addition, if you consider that anaphora is normally achieved through pronominal reference, then the repetition of a constituent deviates from the norm, so once again there is the potential for a markedness effect.

Consider next, constituent shift devices such as *hyperbaton*. *Hyberbaton* describes the shift of a constituent out of the basic or unmarked word order. So, beginning with the basic structure in (4):

(4) The *weary and starved* children finally arrived home.
[basic structure]

the prenominal adjectival phrase could be shifted to a postnominal position as in (5):

(5) The children, *weary and starved*, finally arrived home.
[markedness]

producing a marked linguistic form, and allowing for a potential markedness effect. The adjectival phrase could also be shifted to sentence initial position as in (6):

(6) *Weary and starved*, the children finally arrived home.
[markedness + primacy]

producing once again a marked linguistic form, but this time creating the potential for a primacy effect as well as a markedness effect. The adjectival could also be shifted to sentence final position as in (7):

(7) The children finally arrived home, *weary and starved*.
[markedness + recency]

producing another marked form, and creating this time the potential for a recency effect, as well as a markedness effect.

Rhetorical devices are, then, based on a variety of comprehension effects, including primacy, recency, frequency, and deviancy/markedness. Moreover, these devices describe linguistic forms that have very high cognitive salience. These two characteristics -- high salience and a cognitive basis in comprehension effects -- have considerable relevance for modern discourse research, particularly for the thorny problems surrounding the discourse prominence phenomenon.

## Rhetorical Device Type Linguistic Forms and Discourse Prominence

Discourse prominence is the phenomenon in which linguistic units differ in their perceptual salience, such that greater perceptual salience represents greater importance or significance to the language user. It is a phenomenon that is far from being well understood. The prevalent linguistic approach to studying prominence is based on the grounding metaphor, an approach including studies such as Hopper and Thompson (1980), Reinhart (1984), as well as many others.

However, grounding does not provide a complete account of prominence. For instance, grounding studies account for prominence only in narrative discourse. But there are, of course, numerous discourse genres other than narrative. Moreover, in the grounding approach, only temporally sequenced narrative events can be coded for prominence. But it seems plausible that language users might need to code other linguistic units as prominent. And indeed, the coding of non-event units *must* be possible in the case of the many discourse genres that have no event structure.

On the other hand, the coding of prominence in linguistic forms of the rhetorical device type is subject to neither limitation. Such marked linguistic forms are not restricted to any genre or to any linguistic unit. Indeed, as we have just seen, these linguistic forms are prime candidates for prominence coding devices, because of their high salience and because of their cognitive basis in comprehension effects.

### The Prominence Strategy

This all has particular significance for discourse processing. One thing that we have learned from research into discourse processing strategies is that in both production and comprehension, the language user must contend with cognitive limitations, for instance those associated with memory and attention. We have limited attentional resources. Long term memory access tends to be unpredictable -- and sometimes problematic. Working memory is limited in duration, and so forth.

There is evidence from discourse processing research (e.g., Prideaux 1991; Abraham 1991) that because of such limitations, language users manage information according to specific strategies. These strategies, in effect, constrain the way information is distributed in discourse. For example, the given/new strategy results in the given/new phenomenon in discourse (see, for instance, Prideaux 1991).

Similarly, in the case of discourse prominence, the prominence phenomenon appears to be the consequence of a prominence strategy that has a general representation something like this:

> *Prominence Strategy*
> Marked linguistic forms code information that is especially important to the meaning of the discourse.

It is a strategy that is operative in both comprehension and production. For speakers/writers, the form would be something like:

> *Prominence Strategy* PRODUCTION
> Increase the saliency of important/significant information by coding it in marked forms.

and for hearers/readers the form would be something like:

> *Prominence Strategy* COMPREHENSION
> Expect information encoded in marked forms to be especially important/significant to deriving the meaning of the discourse.

Such a prominence strategy thesis suggests two major predictions, one associated with comprehension and one associated with production. If hearers/readers do use such marked forms as a cue to important information, then it is to be expected that the information so coded would be better recalled. My research indicates that this is the case. The experimental format for this research involves subjects in two conditions hearing passages containing linguistic forms of the rhetorical device type. The passages in each condition are identical, except that specific rhetorical device type forms are present in one passage but not the other. In a recall study (Abraham 1993; cf. Abraham 1994) it was found that the presence and absence of rhetorical device type forms in a passage did indeed affect recall, in that information coded in these forms tended to be better recalled. Currently, I am engaged in a large comprehension study examining the function of rhetorical device type linguistic forms in discourse passages from several spoken and written genres.

A second prediction is that if speaker/writers do use such marked linguistic forms to code prominence, then it is to be expected that these forms would occur with demonstrable consistency in a variety of discourse genres. That is to say, it should be possible to show that such linguistic forms occur consistently in conversation, such as you had over lunch, or in discussions, such as we are engaging in right now, or in any other genre. My research indicates that this too is the case. I am just completing a large production study which has examined a wide variety of spoken and written genres for specific rhetorical device type linguistic forms. These forms were found to occur consistently throughout the genres, and to function in the coding of key information.

## Conclusion

In sum then, rhetorical devices describe a set of linguistic forms that make use of comprehension effects such as primacy, recency, frequency, and deviancy/markedness. These linguistic forms have a high cognitive salience that make them ideal devices for coding discourse prominence, and indeed, they can be seen to be implemented within a cognitively based information management strategy -- what I have called *the prominence strategy*.

Classical rhetorical devices then, appear to be one important key to solving the prominence mystery. This takes us one step further to understanding discourse prominence and strategic information management, and so provides a foundation for future research to experimentally assess the prominence function of such marked linguistic forms in discourse.

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# SIMULTANEOUS SPEECH IN MAKKAH ARABIC FEMALE CONVERSATION

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## 1.0. INTRODUCTION

When I was a little girl, my mother always admonished me, "Don't interrupt." "Don't talk while others are talking." "Wait your turn." This was a part of my language socialization. Most children who are speakers of Mainstream American English are similarly socialized. The linguistics literature about English is full of studies which examine interruptions, the notion of the "turn", and the rules that govern turn-taking.

## 2.0. BACKGROUND

During the late 1960s and 1970s, a body of literature emerged that considered more closely the interactional moves that were used in conversation. Goffman (1967) described interaction as a ritual. Duncan (1970) considered interaction as a "grammar" or a "system" in which there were rules that governed conversational moves. Others, such as Kendon (1967 et seq) studied the relationship between speech in conversation and body movement and eye gaze. Schegloff (1968 et seq), Wiemann and Knapp (1975) and others have been interested in how speakers determine their place in a sequence of conversational turns. Duncan (1974 et seq) describes the conversation in terms of "mutually exclusive" states, speaker and auditor, and the speaking-turn system that operates between them.

In their research about the turn, all of these authors have noted instances of simultaneous speech in which the turn was not observed. They have generally assigned these instances of simultaneous speech to one of two categories. In one category simultaneous speech is a type of back-channel communication, as Yngve (1970) calls it. The listener is giving feed-back to the speaker and is not trying to take over the turn. Indeed, the listener is providing information that the speaker needs in order to continue the turn. The other category, simultaneous turns, is what my mother tried to teach me to avoid. In this category the listener is making a bid for the floor. There may be many motivations for the simultaneous turn. It may occur because a person's language socialization was incomplete or because the listener is being rude. It may occur out of frustration with a long-winded speaker. Or it may also be because the listener misunderstands signals that the speaker is making and interprets them as turn-relinquishing signals (Tannen 1984). Whatever the cause, the result is that the listener barges into the turn.

Either of the two preceeding categories allow for only a brief period of simultaneous speech. On the one hand, the back channel communication is background information that is useful to the speaker and enables him/her to continue the turn. On the other hand, the conflict of simultaneous speech that results from a bid for a turn is resolved rather rapidly. Either the speaker continues the turn and the listener discontinues the utterance with which s/he was making a bid for the floor, or else the listener is successful in gaining the floor as the new speaker, and the old speaker is silenced. Whichever is the outcome, the period of simultaneous speech is brief.

Another kind of simultaneous speech has been observed by Tannen (1984). She has made interesting conversational analyses using the concept of the duet, in which two conversationalists cooperate as partners in speaking with a third person. This is a type of cooperative communication in which two interlocutors are interacting with a third person who is the speaker. The two support each other in back-channel information for the speaker and conjointly make bids for the floor. In essence, their "duet" is one half of a dyadic conversation. This cooperative conversation, however, falls into the same two categories already mentioned.

How universal are turn-taking routines? Miller (1963) has stated that turn-taking is "universal". Others have implied it if not stated it outright. Ochs Keenen (1976) demonstrates that other conversational principles, such as Grice's (1967) Cooperative Principle and its attendant Maxims that are taken for granted in Western or English-speaking societies, in particular the "Be Informative" Maxim, are not necessarily given the same prominence in other societies or speech communities, in particular Malagasy. Similarly, the principle of the "turn" in conversational routines may be subject to variation across cultures. Tannen (1984) has pointed out that the frequency of interruptions can have vastly different interpretations, depending on who is interrupting whom. What her data indicate is that one person's back-channel communication may be someone else's bid for the floor, that one person's language socialization of polite non-interruption may seem to another person a lack of interest.

The literature shows that most of the situations described or the experiments done were based on American data. Even Tannen's data described American speakers, albeit of easily recognizable ethnic background. However, even her data indicate that the simultaneous speech she observed falls into one of the above-mentioned categories: either back-channel communication or bid for the floor.

## 3.0. MAKKAN FEMALE CONVERSATIONAL ROUTINE

In the Makkan Arabic female speech community, a different type of conversational routine occurs. This conversational routine is not one of brief overlapping utterances, such as those that have been described elsewhere in the literature, but rather one of sustained simultaneous speech.

This paper will describe the social event with which this conversational routine is associated, the utterances used, and the consequences this has for other speech events in the same speech community. Data was collected by native speakers of Makkan Arabic during a frequently occurring social event, that of the ladies tea party.* The data was analyzed with reference to the demographics of the interactant/participants and the linguistic utterances evidenced at this social event. The results show that for a segment of the speech community "universal" turn-taking rules are not flouted, but are regularly held in abeyance. The regularity and systematicity of this occurrence argues for the existence of a turn-taking rule that prohibits turn-taking.

The conversational routine that this paper examines is the formal greeting. While vestiges of this routine are still seen in other social contexts, the fullest representation of it at present is at the ladies tea party. A word about Makkan social structure is perhaps appropriate here. Makkah is situated in the western region of Saudi Arabia. It is the holiest city in Islam and, probably because of this, the most conservative characteristics of Islam are present in its social structure. One of these characteristics is that the sexes do not mix socially. Another is that a woman's sphere is the home. Because of these, a woman meets no men in her life that are not close non-marriagable relatives. She ventures outside the house infrequently. Her social contacts consist of women relatives and other women friends. One of the least structured social events that she may attend is the ladies tea party. It is in this context that extended simultaneous speech during the greeting ritual occurs.

In the old days, more than twenty years ago, when women visited other women, there was a specific greeting ritual that was followed (Fadaq 1992). Upon entering the house, the visitor would take off her black silk cloak and veil and give it to the hostess who would place it in a hand-made cover. The visitor would then be conducted to the visitors' livingroom and be seated on the cushions or cushioned benches that line the perimeter of the room. The hostess would fan the visitor with a highly decorated wooden fan until she cooled off. The visitor would be the one to initiate the greeting ritual with the hostess. This process would be repeated with each new arrival, who would walk around the room and briefly greet each of the other guests with a handclasp and a kiss on both cheeks before seating herself (Baslum 1990). At this point, the newest arrival would begin the greeting ritual with the woman seated on her right and continue with each of the already seated ladies. This greeting ritual was known as the tamsiya.

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*I am indebted to two of my students, Manal Othman Fadaq and Fatmah Ali Baslum and their families and friends for providing the initial raw data and evaluations.

Today, there have, of course, been some changes. The hostess still greets the visitor and takes her black silk cloak and veil from her, but the hand-made cover is a thing of the past. The hostess still escorts the visitor into the visitors' livingroom, but with the prevalence of air-conditioning and electric fans the hostess no longer feels it encumbent upon her to sit and fan the visitor. The greeting routine still is performed. The newest arriving visitor must walk around the circle of already seated women, who rise and greet the newcomer briefly with a handclasp and a kiss on both cheeks. The newest visitor then sits with the others and initiates the greeting ritual.

## 4.0. THE GREETING ROUTINE

### 4.1. The Opening Gambit

Because the traditional ladies tea party was given in the afternoon, the traditional opening and response was the following:

```
(1)  keif 'amseit        -i
     how  reach afternoon-you (fem)
     'How are you this afternoon?'

     masa      al -Xeir
     afternoon the-good
     'Good afternoon.'
```

If it was a party given in the morning, then the opening and response would be as follows:

```
(2)  keif 'aSbaHt      -i
     how  reach morning-you (fem)
     'How are you this morning?'

     SabaaH  al -Xeir
     morning the-good
     'Good morning.'
```

Because the morning party was quite unusual, the greeting routine takes its name, *tamsiya*, from the root *masa* 'afternoon' and not from *SabaaH* 'morning' (M. Abu-mansour 1994).

In English we ask "How do you do?" or "How are you?" and receive an answer like "Fine, thank you." In Makkan society today, the greeting deals first with the state of the listener.

```
(3)  keif Haal - ik
     how  state  your (fem)
     'How are you?'
```

This may be augmented by specifically inquiring about the health of the listener.

(4) keif Haal SiHHat -ik
how state health -your(fem)
'How is your health?'

After the visitor asks about the state of the listener, she goes on to inquire about the state of others that are known to both of them. Since women have traditionally kept close to the home and have had little experience outside the home, information about the family and nearby neighbors are for the most part the source of conversation. If the listener is married, the next inquiry will be about her husband. A very traditional question is the following:

(5) keif Haal siid 'al-beit
how state master the-house
'How is the master of the house?'

Other forms are also used:

(6) keif Haal 'al-sayyid
how state the-master
'How is your husband?'

(7) keif Haal abu -(fulan)
how state father-(someone)
'How is (someone's) father?'

After the husband's condition has been enquired about, the children are next on the list. Older ladies use traditional expressions, such as follows:

(8) keif Haal 'ism 'allah ?aley-hum
how state name Allah on -them
'How are your children?'

(9) keif 'al -maHaafiiZ
how the-saved ones
'How are your children?'

(10) keif Haal 'al -maHruusiin
how state the-guarded ones
'How are your children?" (Abu-Mansour, A. 1994)

More modernly, the question is asked as follows:

(11) keif 'al-?iyaal wa 'al -banaat
how the-boys and the-girls
'How are your boys and girls?'

If the questioner is not sure that the listener has boy and girl children, a more general way of putting it is as follows.

(12) keif Haal 'al -'awlaad
how state the-children
'How are your children?'

Even though morphologically the word *'awlaad'* is the plural form of 'son', in this context it almost always implies that both boy and girl children are the object of the question.

Then the visitor may enquire about the state of the listener's female relatives if they are not present.

(13) keif Haal umm -ik
how state mother-your
'How is your mother?'

(14) keif 'al-karaayim
how the-generous ones
'How are your sisters?'

(15) keif 'al-'aXawaat
how the-sisters
'How are your sisters?'

The euphemism for 'sisters', as given in (14), is an honorific term and would be more formal than (15).

When the names of the sisters are known, the speaker will enquire about each one individually:

(16) keif Haal (Hanan)
how state (Hanan)
'How is Hanan?'

keif Haal ('amal)
how state (Amal)
'How is Amal?'

keif Haal (fatmah)
how state (Fatmah)
'How is Fatmah?'

She would continue with each of the other sisters by name. She might also branch out and ask about a married sister's husband and children, again each in turn.

Because of the segregated nature of Makkan society, a restriction applies to the male members of the listener's family. The speaker has not met these men, will probably never meet them, and has no business with them anyway. Presumably their states are of interest to the speaker only in an oblique way as they pertain to the listener. Because of this, male relatives are often mentioned in a collective way.

(17) keif 'al-'ahil kulla-hum
how the-family all -them
'How are all the family?'

If there is anything noteworthy among the male family members, such as a recent marriage, sickness, or promotion, that person might be enquired about individually. For example:

(18) keif Haal SiHHat 'abuu -ki
how state health father-your
'How is your father's health?'

If the hostess's neighbors are known by the visitor, the neighbors may be asked about next. In many traditional neighborhoods they are considered a second family. A general question about them will be asked:

(19) keif 'al-jiiraan
how the-neighbors
'How are the neighbors?'

(20) keif Haal jiiraana -kum
how state neighbors-your
'How are your neighbors?'

### 4.2. The Rejoinder

In English the question "How are you?" is a ritual question. No real request for information is intended and when the rejoinder is anything other than "Fine, thank you" or some variation of that, it is seen as a deviation. So it is in the Makkan Arabic greeting routine. The answers to the above questions are highly predictable. The most commonly heard answer is the following:

(21) 'al-Hamdu li-'allah
the-praise to-Allah
"Praise God."

This answer is given either alone or with other rejoinders.

(22) be -Xeir
with-good
'Fine.'

(23) kuwayyis
good
'Fine.'

If the question asked is about one of the listener's family members or neighbors, the rejoiner may be (21) followed by:

(24) Tayiib-iin
good (plural)
'Fine.'

Any of these rejoinders, either alone or in combination with (21), may be followed by:

(25) in sha' 'allah
as wills Allah
'As God wills.'

The result is that a typical question and answer would be as follows:

(26) A: keif al -'awlaad
how the-children
'How are your children?'

B: al -Hamdu li-'allah Tayyib-iin
the-praise to Allah good -(plural)
'Praise God! Fine,

in sha' 'allah
as wills God
as God wills it.'

### 4. 3. Format of the Tamsiya

Close analysis of conversation has identified such conversational phenomena as adjacency pairs, of which the question and answer is one, and the effect of chaining (Goffman 1976), which is a long sequence of question and answers. The Makkan Arabic tamsiya appears to have characteristics of both adjacency pairs and chaining. However, what sets the Makkan Arabic tamsiya apart from other conversational routines that have been studied is the timing of the questions and answers.

The speaker does not give the listener a chance to answer the first question before she goes on to the next question. After the first question, the entire routine proceeds as simulataneous speech.

The square brackets indicate simultaneous speech. This diagram is a simplified representation of a typical routine. As can be seen, simultaneous speech occurs during a major part of the routine.

(27)

| | | |
|---|---|---|
| A: | keif Haal -ik<br>how state-your<br>'How are you?' | keif Haal al -sayyid<br>how state the-master<br>'How is your husband?' |
| B | | al -Hamdu li-'allah Tayyib-ah<br>the-praise to-Allah good (fem)<br>'Praise God! Fine!' |

Time: --> --> --> --> --> --> --> -->

| | | |
|---|---|---|
| A: | keif Haal al -'awlaad<br>how state the-children<br>'How are your children?' | |
| B: | al -Hamdu li-'allah<br>the-praise to-Allah<br>'Praise God!' | kuwayyis<br>good (masc)<br>'Fine!' |

Time: --> --> --> --> --> --> --> -->

| | | |
|---|---|---|
| A: | keif Haala-kum kullu-kum<br>how state-your all -your<br>'How are all the family?' | |
| B: | tayyib-iin in sha' 'allah<br>good (plural) as wills Allah<br>'They're fine, as God wills.' | |

Time: --> --> --> --> --> --> --> -->

| | |
|---|---|
| A: | |
| B: | al -Hamdu li-'allah<br>the-praise to-Allah<br>Praise God!" |

Time: --> --> --> --> --> --> --> -->

This greeting ritual may continue for several minutes with both women speaking simultaneously. There is no doubt but what they are actively listening to each other and responding correctly. This can be seen by the fact that when the question is about the listener's husband, the answer is masculine. When the question is about the listener's children, the answer is plural.

In some cases the speaker and listener may be separated by the length of the visitors' livingroom. Other women may be conversing with each other. It may not be possible to be entirely clear as to the question and answer. In these cases, the listener would respond with a neutral rejoinder, such as "Praise God!" In fact, in such a situation Baslum (1994) reports that the listener may not even vocalize the rejoinders, but instead merely moves her lips to form the words, nods her head, and engages in eye contact with the speaker for the duration of her portion of the greeting routine.

## 5.0. FACTORS INVOLVED IN THE TIME SPENT IN GREETINGS

Baslum (1990) looked at several demographic factors in relation to the length of time spent in the greeting routine. Although her data has not been subjected to any rigorous statistical analysis and the subjects were not controlled, the results are still suggestive of a trend among users of simultaneous speech.

Among the demographic features included were the age categories of 20 to 35, 35 to 45, and 45 or older and whether the speaker had university education or not.

Baslum's date indicate that the older the speaker, the more time was spent in this ritualized type of greeting. Also, non-university educated speakers spent more time in greetings than university educated speakers. However, since no statistical analysis was done on the raw data, whether these trends are statistically significant or not remains an area yet to be fully explored.

Baslum's data were not concerned with the phenomenon of simultaneous speech, but dealt only with the total time spent in the greeting routine. It is to be expected that not every woman uses simultaneous speech to the same extent. There may be some correlation with the length of time spent in the greeting routine and with the amount of simultaneous speech. Baslum's data are suggestive of a continuum of simultaneous speech usage in which younger women spend less time in the greeting routine and older women more time, with the added factor of a university education lessening the amount of time spent in the greeting routine in every age category. Whether this phenomenon is a result of a sociolinguistic change or due to age-grading is yet to be determined.

## 6.0. CONCLUSIONS

The conversational "rule" of first one speaker then another in turn does not seem to be a universal rule for all conversational routines. Simultaneous speech in general in many cultures is considered to be either a non-turn-threatening background channel by which the listener funnels information to the speaker without a bid for the floor, or else a turn-violating move on the part of the listener in a bid to take over the floor. The first one is hardly consciously noticed by the speaker; the second one is generally considered rude and threatening. However, in Makkan women's speech there is a conversational situation, the ritualized greeting routine, in which simultaneous speech does not play either of the two above-mentioned roles.

If the ontogeny of simultaneous speech in this situation could be established, the motivation must surely be involved with the predictability of the questions and the responses. Just as English greeting routines are fixed within a narrow range of possibilities both for the question and answer, so they are in Arabic. In English a positive answer must be given to the question "How are you?" In Arabic also, the answer to the question "keif Haal-ik?" must be answered positively. Usually the positive answer is preceded or followed by a religious phrase, or sometimes the religious phrase is used as the rejoinder itself. Because of the pervasiveness of Islam in everyone's thoughts and lives, the use of a religious rejoinder such as "Praise God" or "As God wills" is instinctive and/or spontaneous. Any kind of question that calls for an answer about one's condition, both in the greeting routine as well as outside of it, will call forth an answer that expresses the Muslims' consciousness of the Divine.

In the tea party setting, the newly arrived visitor greets each person in turn, with a high percentage of the questions and responses being performed simultaneously. This large amount of simultaneous speech may be motivated by the predictability of the answers and, indeed, the listener can even predict the next question to a large degree. It is interesting to note that after all the women have been greeted, the newly arrived visitor is then free to return to any of the women she wishes to talk to, and repeats many of the same questions. The second time, however, simultaneous speech does not occur. The speaker listens to the responses attentively and the responses themselves, while they may begin with a routine response, proceed to give the questioner real information. At this time also, the listener has an opportunity to take the floor with her own questions. During this exchange of real information, any simultaneous speech that follows is characterized more closely as back-channel information and bidding for the turn.

This simultaneous speech routine does resonate in conversational situations other than the greeting. In my observation/participation in social conversations in which a number of women are attending to the conversation, it is not infrequent that a woman will abruptly begin another conversation on a different topic. In other words, a circle of women are all attending to one conversational topic with the standard turn-taking routines occurring. Not infrequently, one woman will address another woman and begin another conversation, even across the circle. This is not usually a sotto voce side conversation about a related topic, but a full-blown conversation with a different discourse structure. For an English language socialized person, this is quite disconcerting, but in Makkan Arabic women's speech situations, at least, it is not considered anything out of the ordinary. The relationship between the simultaneous speech of the greeting routine and the interruption of the group converation to begin a new discourse deserves further study.

Since I am a Muslim woman living in an Islamic society, I have had occasion to observe only female speech situations. I have asked myself whether this same phenomenon applies to men's speech as well. My husband has the impression that men do not have the same kind of greeting routine that uses simultaneous speech. However, from what I have heard of one side of many telephone conversations, I suspect that something similar may be occuring in men's speech as well. Until actual observation can be conducted, it remains an open question.

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# EXPERIMENTAL EVIDENCE FOR INHERENT RELATIONALITY

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In Coleman (1992), I pointed out the major role that has generally been assumed for "real-world" (nonlinguistic) knowledge (RWK) in the interpretation of numerous types of definite expressions. Previously, I examined two examples cited in earlier work which were intended as clear illustrations of the need for real-world knowledge.

(1) E: Show it [the wheelpuller] to me, please.
A: OK.
E: Good. Loosen *the screw in the center* and place the jaws around the hub of the wheel....

(2) Tommy had just been given a new set of blocks. He was opening *the box* when he saw Jimmy coming in.

One of these was taken from Grosz and Sidner (1986:186), as seen in (1), above. Grosz and Sidner argue that a complex system of stack processing is needed in order to deal with anaphora in discourses such as the one from which discourse segment (1) is drawn. They further argue that this system of stack processing is based on a nested discourse structure that is closely associated with RWK, in this case, with the structure of the task in which *A* (an apprentice) and *E* (an expert) are engaged. In *The Eighteenth LACUS Forum*, I argue that it is not RWK *per se* (Grosz & Sidner, 1986:186) with which listeners interpret a definite expression like *the screw in the center* in (1), below, but what I call the "inherent relationality" of lexical items like *center*. I demonstrate there that *the screw in the center* can be treated as containing a zero anaphor (and an interpretation like *the screw in the center of Ø*). The immediately available referent for this Ø is *it* (with antecedent *the wheelpuller*); so confusion with other screws mentioned earlier in the discourse is not an issue. Such a treatment obviates the need for *general* RWK of the type Grosz and Sidner's approach calls for, as well as the rather complex stack-based discourse structures they propose.

Similarly, Winograd and Flores (1986:13) echo the long-standing assumptions of many when they say RWK about gift-giving, for example, is needed in order to correctly interpret the definite reference of *the box* in (2), above. This presents serious problems for research in natural language processing, they argue. After all, how is the researcher to develop an algorithm (a) to determine that RWK about gift-giving is what is required and (b) to limit access to the appropriate RWK from that domain? (Problematically, it would seem that in order to know which RWK is required, i.e., that about gift-giving, an individual already has to have interpreted (2).) However, as I show in Coleman (1992), *the box* can also be treated as including a zero anaphor, i.e., as analogous to *the box containing ∅* or *the box of ∅*. The antecedent for ∅ is *blocks* (or perhaps, *a new set of blocks*). Thus, the notion of inherent relationality has been shown to be able to deal very straightforwardly with some different types of problems involving the interpretation of definite expressions. The notion of inherent relationality not only generalizes across problems that were previously thought to be of different types, it presents a simpler solution than the one Grosz and Sidner offered to deal with a more limited range of cases.

While I believe the arguments I present in Coleman (1992) are logically convincing, they were based on the created examples presented in Grosz and Sidner (1986) and Winograd and Flores (1986) and on my analyses of some actual texts from newspapers and magazines. This evidence is essentially anecdotal, and I have until now presented no real empirical evidence in support of the notion of inherent relationality. In this paper, I will present the results of an experiment I conducted as evidence for the view that *general* RWK, especially of the type assumed by Winograd and Flores (1986) (and by many, if not most, in the field) is not needed for the interpretation of the types of definite expressions that I have been discussing. In this sense, it is a postscript to Coleman (1992).

***Subjects***. Subjects (Ss) were 34 undergraduate and 3 graduate students (mixed) in two sections of a combined undergraduate/graduate introduction to linguistics course at the University of Toledo.

***Instrument***. Two forms of a questionnaire-like instrument were used. Each form contained ten "mini-dialogues". One form contained mini-dialogues like (3); the other, mini-dialogues like (4). Ten different items similar to (4) were generated first. Then, the nonsense word analogues (like (3)) were derived from these by replacing the lexical item thought to be *A*'s antecedent (e.g., in (4), *blocks*) to *B*'s zero anaphor (e.g., in *the box [of ∅]*) with a nonsense word (e.g., *klobs*). Care was taken to ensure that the nonsense word did not very closely resemble an existing word, especially something which would "fit" in the original RWK domain.

(3) A: Tommy got some klobs.
B: Oh! Has he opened the box yet?

(4) A: Tommy got some blocks.
B: Oh! Has he opened the box yet?

The form with mini-dialogues like (3) is designated "Form N" (for "***N***onsense word"), that with mini-dialogues like (4), "Form R" (for "***R***eal word").

Complete versions of the two instruments are given in Appendix I at the end of this paper.

***Procedure.*** One group of Ss was presented with Form N, the other group with Form R. The same instructions appeared on each form:

> In each space below, read what speaker A says, followed by what speaker B says. Then, write the answer to the following question in just a few words. All of the questions begin with "who/what" -- this is only to avoid biasing you toward one specific answer in your response.

For example, the question (the same on both forms) for the mini-dialogue in (3) and (4) was *Who/what was inside the box?* Ss were instructed that they could respond with the phrase "I don't know"; they were also told that a short answer of at most a few words would suffice in each case. Ss were instructed not to make "wild guesses".

***Prediction.*** When Ss read (4), how will they know that RWK about gift-giving applies? If they have general knowledge about blocks as toys, that the diminutive form *Tommy* is usually applied only to a child, that the blocks are in a box, etc., they might guess that the blocks are a gift from someone else to Tommy. In fact, there is no compelling reason why a reader should conclude something along these lines rather than infer that Tommy has recently bought the blocks himself or traded his pet turtle for them, or that he merely went to the closet to get them, and so on. Now, given the overall paucity of clues in (4) as to which domain of RWK applies, the loss of any single clue (as in (3) compared to (4)) should have a clearly observable effect.

Let us suppose for a moment that general RWK of the type claimed by Winograd and Flores (1986) is required in cases like (4). If so, then the group with Form N -- lacking a significant clue identifying the relevant RWK domain and simply not knowing what *klobs* are -- should answer the question *Who/what was inside the box?* with *I don't know* significantly more often.

On the other hand, if Ss are not using *general* RWK but instead the inherent relationality of the definite expression (e.g., *the box*), there should be no significant difference in this aspect of their response patterns. Ss with Form N should respond *I don't know* no more often than those with Form R.

***Results and discussion.*** I did not warn Ss not to make "guesses" about the meanings of the nonsense words on Form N, afraid that this might bias their responses. Unfortunately, the result was that half of the Ss viewing Form N did guess in this regard. One S viewing Form R made guesses of a slightly different nature, for example, that the *crime* mentioned in one item was *a burglary or a murder* and that the file about a *new account* in another item contained *personal information*. I will return to the implications of both of these types of guesses shortly.

Excluding response sheets with guesses of either type, I performed a simple statistical analysis of the data. For each item, I calculated the percentage of Ss who gave the expected response on that item. Averaging across items, I obtained a mean for Form R of 96.9% "hits" (n=18, s.d.=3.725) and a mean for Form N of 97.8% "hits" (n=9, s.d.=4.638). A t-test (25 d.f.) revealed no significant difference (t=-0.55, p=.587). Given two means so close to 100% and quite small standard deviations, it was clear that further analysis (e.g., a log linear analysis to identify differences in patterns of response on the two forms) would not be informative.

Recall that there was one case in which a S viewing Form R made guesses narrowing the scope of the lexical meaning of *crime*, for example, to *burglary or murder*. In the few such instances that occurred, coreference between the expected response and the one the S provided was obvious. Therefore, the only remaining problem is to resolve those cases in which Ss made guesses about the lexical meanings of the nonsense words in Form N.

Which comes first, a guess of the lexical meaning of the nonsense word, or the interpretation of the definite expression (the latter being the identification of a link between the definite noun and the nonsense word)? If RWK is key in interpreting such definite expressions, given the paucity of other clues, the guess must come first. But if this is the case, it is hard to explain why a broad range of guesses arise and yet consistently yield the same interpretation. For example, (5) is one item from Form N.

(5) A: I need some raulfa.
B: Omigosh! The bag has a hole.

Question: Who/what was in the bag? ______________________

Guesses of the lexical meaning of *raulfa* included *type of fertilizer for plants*, *money*, *chips*, *salt*, *material for construction or crafts*, and *charcoal*, among others. Yet I was assured by all the Ss involved that these responses constituted what they thought *raulfa* must mean.[1] If all of the Ss were able to establish a link between *the bag* and *raulfa* on the basis of such disparate guesses, it would seem that just about any RWK will do. (Again, we encounter the intractability of the problem of which RWK to access.)

Clearly, it was not Ss' knowledge of *raulfa* that contributed to their understanding of the *raulfa*'s relationship to *the bag*, but its relationship to *the bag* that led them to be able to make the guesses about the meaning of *raulfa*.

***Conclusions.*** The data does tend to support the notion of inherent relationality, though not as strongly as expected. This is primarily due to the need, in the current study, to interpret the Ss' guessing behavior. (Recall that cases not involving guessing revealed no significant difference in between Form N and Form R.) The problem appears to lie in the instrument, which was constructed in a way that did not preclude guessing of the meanings of the nonsense words used to block out the use of general RWK on Form N. A multiple-choice format would have eliminated this problem, but would have generated its own problems (not the least being a significant threat from researcher bias).

In a sense, inherent relationality represents a sort of RWK, but one that is definitely neither non-linguistic nor general. For example, to know the lexical item *box* is to know its lexical meaning, but also its inherent relationality (*box of X*). Inherent relationality thus presents a solution to the intractable problems of identifying relevant RWK and then accessing it for the interpretation of more than one type of definite expressions.

## ENDNOTES

[1] Immediately upon receiving the Form N results with responses such as *toys* to the item given in (3), I asked who gave that response. I then asked that S how he knew the box contained toys. He responded that he was not certain, but was trying to guess what *klobs* were. I asked several Ss about their responses to the same and other items on Form N and got almost identical replies.

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## Appendix I

On the following pages, the instruments used to collect data for this study, Form N and Form R, are reproduced in full.

English/Linguistics 3/515
Sample Psycholinguistic
Experiment

PLEASE DO NOT WRITE YOUR NAME

R

This activity is designed so that you can see what a psycholinguistic approach to the study of language looks like. (Like other linguistic approaches, it is descriptive, rather than prescriptive.) The area of linguistics called "applied linguistics" is concerned with psychological aspects of linguistic processing and sociological aspects of language use. It also proceeds in a somewhat different fashion from either "theoretical linguistics" or "anthropological linguistics". Applied linguistics data is most often derived from experiments or questionnaires designed to test hypotheses about language. Psycholinguistics is the area of applied linguistics concerned with how people apply cognitive processes to the understanding and production of language.

The following is a sample experiment designed to reveal something about how people process language. When you have finished, I will briefly explain what the experiment is intended to show and how the approach is developed in another course, English 415 -- Applied Linguistics.

= = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = =

***In each space below, read what speaker A says, followed by what speaker B says. Then, write the answer to the following question in just a few words. All of the questions begin with "who/what" -- this is only to avoid biasing you toward one specific answer in your response.***

1. A: Could you get me another Scotch?
B: Sorry. The bottle's empty.

Question: Who/what was inside the bottle? ____________________

2. A: When was the crime discovered?
B: The report is incomplete.

Question: Who/what was the report about? ____________________

3. A: What happened to the princess?
B: I didn't finish the story.

Question: Who/what was the story about? ____________________

4. A: I'd like some more peaches.
B: Alice had the can.

Question: Who/what was in the can? ____________________

5. A: I need some flour.
B: Omigosh! The bag has a hole.

Question: Who/what was in the bag? ____________________

6. A: Tommy got some blocks.
B: Oh! has he opened the box yet?

Question: Who/what was in the box? ____________________

7. A: Tell me about the new account.
B: Hmm.. I can't find the file.

Question: Who/what was in the file? ____________________

8. A: Will your new rocket ship be a success?
B: I have every confidence in the design.

Question: Who/what is the design of? ____________________

9. A: I need to check those figures again.
B: I though Al had the folder.

Question: Who/what was in the folder? ____________________

10. A: What did you think of the candidate last night?
B: I didn't see the program.

Question: Who/what was on the program? ____________________

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English/Linguistics 3/515
Sample Psycholinguistic
Experiment

PLEASE DO NOT WRITE YOUR NAME

N

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   B: I though Al had the folder.

   Question: Who/what was in the folder? ____________________

10. A: What did you think of the stankadid last night?
    B: I didn't see the program.

    Question: Who/what was on the program? ____________________

# PLANNED AND UNPLANNED NARRATIVE DESCRIPTIONS: AN EXPERIMENTAL STUDY

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1. INTRODUCTION.* The subject matter of discourse analysis is extremely diverse, covering a broad range of language use from the highly formal to the extremely casual, and a host of complex varieties between. Moreover, any given discourse can be positioned along a number of intersecting dimensions: oral versus written, casual versus formal, narrative versus discursive, interactive versus monologue, and doubtless a great many more. One such dimension about which relatively little has been written, even though its importance is virtually universally acknowledged, is that of planned versus unplanned discourse.

In the present paper we first examine the distinction between planned and unplanned discourse and the methodological problems associated with their study. Here we find that many of the claims associated with the distinction are severely confounded by such variables as subject matter and modality. We next address these problems through an experimental study. Here we demonstrate that some of the differences between planned and unplanned discourse cited in the literature are indeed viable, while others are not. We conclude that important distinctions in the two types can be attributed to differences in processing factors and in the way in which we organize our mental representations of events.

2. PLANNED AND UNPLANNED DISCOURSE. One of the clearest expressions of the distinction between planned and unplanned discourse, as well as one of the earliest, is that of Ochs (1979), who characterized planned discourse as that which has been thought out and organized prior to its expression, whereas unplanned discourse is that which lacks forethought and organizational preparation (55). As Ochs is quick to note, these two definitions are more appropriately seen as the ends of a continuum, with a variety of different degrees of planning possible, a situation with which we are all familiar. For example, in a lecture to undergraduates, one might have, on the one hand, only an outline or a set of rough lecture notes, or even no notes at all. Alternatively, one might have detailed and copious notes filled with prepared examples. Lecture styles differ, and the degree of planning varies, even in simple cases like this.

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* This research was supported in part by Research Grant No. 410-93-0109 from the Social Sciences and Humanities Research Council of Canada. We are also grateful to Y. Wang and G. Skrypiczajko for their assistance in the data collection and tabulation for the study reported here.

More specifically, highly planned discourse is often associated with the written language, where one can restructure, edit, and reorganize prior to offering the work to a reader. Similarly, within the oral domain, some forms of discourse, such as sermons, instructions, storytelling, political speeches, and (some) university lectures, exhibit a greater or lesser degree of planning. Moreover, certain of these genres tend to have their own special characteristics and attributes, without which they would not normally be judged as constituting an exemplar of the genre. Thus, while highly planned discourse is typically associated with the written language, this is not a totally accurate picture, and we can equally well have highly planned oral language as well.

At the other extreme, highly unplanned discourse is often associated with casual conversation amongst intimates, where the topics shift, and where shared knowledge plays an important role. Here too, of course, there can be variation, and even in written forms we often find attempts to represent relatively free, unplanned language. For example, plays often attempt to reflect unplanned talk, as do novels in which free conversation is represented. Similarly, in some familiar genres, such as jokes, there is usually plenty of ground for freedom and variation, just so long as the punch line is properly set up.

With this brief background in mind, we can turn to a question of more immediate interest, namely what factors characterize the two types, and how do we provide empirical evidence for any such proposed differences? Ochs (1979) suggested that unplanned discourse is typically characterized by more childlike factors and strategies, while planned discourse is far more elaborated and unidirectional. In distinguishing between the two, she claimed that in comparison to planned discourse, unplanned discourse (a) relies more on the immediate context, (b) uses relatively simpler morpho-syntax, and (c) exhibits more repetition. She argued that planned discourse tends to be characterized by more 'adult' structures, such as more complex structures (e.g., more complementation, subordination, marked structures, etc.), more textual cohesion (as instantiated by such forms as *for example, therefore, on the other hand*, etc.), and the use of topic sentences to alter the flow or open new areas for discussion. Similarly, Givón (1979) has suggested that in the more planned forms of language we should expect to find more of what he calls syntacticization than in the unplanned forms.

The planned/unplanned distinction has, as mentioned above, often been paired with the written/spoken distinction. Thus, it is sometimes argued (by, e.g., Beaman 1984) that the written language tends to be more complex syntactically, with more embeddings, more overt organization, and more complex morpho-syntax than casual oral language. Similarly, Chafe (1982) argued that spoken and written language differ in terms of two sets of features: (a) fragmentation versus integration, which are a function of the use of time in speaking and writing (speaking is more fragmented and writing more integrated), and (b) involvement versus detachment (speaking is more involved and writing more detached). Clearly, these factors might also play a role in the planned/unplanned distinction, where one would expect planned language to be relatively more integrated and detached, and unplanned language relatively more fragmented and involved.

While all these characteristics seem intuitively obvious, they are by no means empirically secure. In the first place, when the data upon which the distinctions are based are examined, we find that in many, indeed most, instances, the data are simply not comparable. It is very difficult to compare a written treatise on Kant's metaphysics, for example, with the casual conversation of two children. Not only do we expect that modality will cast its own influence on the form of language used, but also the topic of discussion will tend to bring along with it important baggage as well. Finally, we can expect that different types of individuals (e.g., children versus adults, friends versus strangers, etc.) will also influence the way a particular discourse is structured and, indeed, we should also expect to find individual differences among people simply on the basis of their own particular styles and idiosyncrasies. Thus, while the distinctions between planned and unplanned discourse appeared at first blush to be relatively simple and straightforward, we find on closer inspection that a number of distinct and important factors can be expected to contribute to the overall forms of the discourse.

What is clearly needed in the empirical study of the distinction, then, is a means by which we can control (a) the modality, (b) the topic, and (c) the potential individual differences while collecting comparable samples of planned and unplanned discourse. Only when this is done and the requisite data carefully assessed can we evaluate the hypothesized differences in the two types and attribute those emerging differences to the distinction between planned and unplanned discourse and not to one or more of the potentially confounding factors. One first step toward the solution of this problem is offered here.

3. AN EXPERIMENTAL STUDY. In order to address the confounding issues discussed above, we undertook a experimental study; both planned and unplanned discourse was elicited from individuals, keeping the topic constant so each participant could serve as his or her own control. In order to do this, we asked individual participants to watch a short silent film clip, a five minute scene from Charlie Chaplin's *The Gold Rush*, and to provide an 'on-line' description, much like a play-by-play description. Such a description is highly unplanned, since the narrator does not know what is going to happen next. Next, after a short distraction task, we asked each participant to provide an oral description of the same scene, this time from memory. In this second description, the speaker had ample time to organize his or her memories and could provide a coherent and relatively highly planned description.

Some twenty native speakers of English, ten females and ten males, all either University of Alberta students or their friends, participated in the study. Each was paid a nominal fee for participation, and each agreed to have his or her two narratives taped. The entire experiment took only about half an hour to complete, including all the instructions and post-experimental interviews.

Each narrative was transcribed and analyzed, and a tabulation was then made for each of some 30 factors, ranging from the number of words, clauses (main, subordinate of various sorts), pauses, hesitations, fillers, repetition, parentheticals, etc. Once this tabulation was completed, it was subjected to statistical analysis, with the participants' data pooled. *T*-tests for correlated samples were carried out on each factor under investigation.

Initially, we turn our attention to the rather gross measures for the narratives. The means for these measures, the numbers of words and clauses, for the two conditions are indicated in Table 1, along with the *t*-values and their significance.

| | Means | | | |
|---|---|---|---|---|
| Variable | Unplanned | Planned | *t* | |
| Total Words | 682.8 | 495.8 | 5.713 | **** |
| Total Clauses | 112.8 | 73.2 | 7.530 | **** |
| Main | 73.1 | 41.5 | 8.794 | **** |
| Subordinate | 38.7 | 31.6 | 2.691 | * |
| Adverbials | 8.2 | 7.2 | 0.895 | ns |
| Complements | 22.7 | 17.7 | 2.115 | * |
| Relative Clauses | 7.8 | 6.9 | 0.756 | ns |

**** $p < .0001$ *** $p < .005$ ** $p < .01$ * $p < .05$

Table 1. Gross differences between unplanned and planned narratives

We first note that the unplanned (on-line) descriptions are significantly longer in terms of the numbers of words and clauses (total, main, and subordinate) than those provided from memory . Of course, the clausal results follow from the fact that the unplanned descriptions are simply wordier. However, other important differences can also seen. For example, within the various types of subordinate clauses reported here, there appear to be no significant differences in the total numbers of either adverbial or relative clauses, though there is a difference in the numbers of complement clauses. These results suggest that there may in fact be differences in the *relative frequencies* of the three types of subordinate clauses in the two discourse types. That is, adverbial, complement, and relative clauses are used differently, or in different proportions, in the two types of discourse.

To test this possibility, the relative frequencies of the total subordinate clauses and each of the three types of subordinate clauses were calculated and the differences in these frequencies between the unplanned and planned discourses were tested, again by *t*-tests with correlated samples. The result of this set of comparisons is found in Table 2.

From Table 2 we see that subordinate clauses are more frequent in the planned discourse than in the unplanned versions, and when we examine the various subtypes of subordinate clauses, we find that both relative and adverbial clauses are more frequent in the planned discourses, while the complement clauses do not differ significantly between the two types of description.

| | Means | | | |
|---|---|---|---|---|
| Variable | Unplanned | Planned | $t$ | |
| Sub. Cls./Total Cls. | .342 | .439 | -5.384 | **** |
| Adv. Cls./Total Cls. | .076 | .108 | -2.034 | * |
| Comp. Cls./Total Cls. | .199 | .237 | -1.838 | ns |
| Rel. Cls./Total Cls. | .069 | .101 | -2.691 | * |

**** $p < .0001$ *** $p < .005$ ** $p < .01$ * $p < .05$

Table 2. Differences in subordinate clause types in unplanned and planned narratives

These results reveal that, in spite of considerable individual differences among the individual narrators, planned discourse contains more subordination than unplanned. Thus, the hypothesis is supported that planned discourse is more complex syntactically, when complexity is measured in terms of relative amount of subordination.

There are, however, other interesting differences in the two types of discourse, certain of which appear to be a function of the stress under which a narrator is placed when producing an on-line description, in contrast with other factors which seem to be more characteristic of the planning required when retelling the story. When providing an on-line description, for example, a speaker might be expected to be more verbose and to use more fragments than in a more fully planned exposition. In a planned discourse, when the memory representation for the episode must be constantly accessed, it might be expected that there would be relatively more pauses, hedges, fillers, repeated words, and even 'run-on' sentences (linked by *and*, for example). In order to assess these possibilities, the relative frequencies of these factors were calculated for both the planned and unplanned conditions. These results are found in Table 3.

| | Means | | | |
|---|---|---|---|---|
| Factor | Unplanned | Planned | $t$ | |
| Words/Clause | 6.099 | 6.803 | -4.192 | *** |
| Sub. Cls./Total Cls. | .342 | .400 | -5.384 | **** |
| Pauses/Clause | .188 | .200 | -0.352 | ns |
| Fillers/Clause | .082 | .233 | -3.675 | *** |
| Hedges/Clause | .024 | .037 | -1.506 | ns |
| Frag. Cls./Total Clauses | .029 | .028 | 0.130 | ns |
| Repeated words/Clause | .030 | .085 | -3.817 | *** |
| *and*'s /Clause | .165 | .308 | -6.153 | **** |
| Parentheticals/Clause | .023 | .020 | 0.354 | ns |

**** $p < .0001$ *** $p < .005$ ** $p < .01$ * $p < .05$

Table 3. Differences in relative frequencies of diagnostic factors

The earlier results revealed that narrators in the unplanned condition were significantly more verbose and used more clauses than in the planned condition.

However, the results of Table 3 indicate that there are more words per clause in the planned condition (an average of 6.803 per clause) than in the unplanned (6.099), indicating that there is more elaboration within each planned clause, a feature which would follow from the notion of planning itself. As already mentioned, there is also a higher relative frequency of subordinate clauses in the planned condition, reflecting a more hierarchic structure, whereas the unplanned discourse tends to be flatter in structure and characterized more by coordination than by subordination.

The relative frequency of pauses, fillers, and hedges per clause is, however, not significantly different in the two types of discourse, contrary to what might have been expected if we think of unplanned discourse as being freer and less goal-directed than planned. In contrast to this result, however, there are significantly more repeated words per clause and significantly more clauses joined by *and* in the planned versions, a result again very possibly associated with the narrators' pausing and filling time while planning the remainder of the local utterance. Such structures are of course quite unexpected in the on-line unplanned descriptions, since the events being reported are moving rapidly forward, and the narrator is forced to keep up with them. In such circumstances, it is unlikely to expect many repeated words or parentheticals.

A further indicator of the distinction between planned and unplanned discourse is found in the relative frequency of certain types of words which play potentially important syntactic functions. For example, if in unplanned discourse we find a relatively "flatter" structure, with less subordination, we would as a corollary expect that some possible compensating devices might be expected, devices which would link one coordinate clause with the next. Indeed, from our experience in watching "play-by-play" descriptions of sports events on TV, we would expect in such a description an abundance of *now*'s to signal the next event, as in (1).

(1) A whole bunch of snow just blew in and hit him in the face.
Now its ... its so windy. It must be from the outside. It uh blew his hat off. *Now* he sits down. *Now* he pickups up his hat.

In such cases, each *now* punctuates the advent of a new action, providing continuity with the preceding events and revealing an iconic function in indicating the order of events being described. Similarly, as Ochs (1979) has suggested, planned descriptions should manifest more words which reveal that the narration is being packaged according to some plan involving relatively larger units. When a story is told from memory, with a series of events one following the other, we would expect a larger number of *then*'s, as in (2).

(2) Some snow falls from the roof and it hits him and he falls down.
The guy inside the shack hears this, so he looks out.
*Then* he goes out the back door.
*Then* this other guy who was outside, he came in the front door.
He sits down and he sees a little dog.
And so he pats the dog.
*Then* he walks over the wall.

In such instances, the appearance of *then* in the planned descriptions appears to be iconic in nature, as the narrator recalls a sequence of events one after the other. Also within planned discourse, one might expect to find more instances of causation, since the narrator, in recalling events and discussing their meanings, often tends to offer reasons for certain actions. One major indicator of causation in English is the form *because*, as in (3).

(3) Then the fur trapper comes back in, really really angry *because* these two guys have been eating his food...

Again as a function of planning, it might be expected to find more instances of *finally* in the planned versions, since this form often signals the end of a particular episode, as in (4).

(4) *Finally*, the third man ends up with the gun.

Accordingly, frequencies for these four words were calculated for each narrative in terms of the number of tokens of each per the total number of clauses in the narrative. These frequencies are found in Table 4.

| | Means | | |
|---|---|---|---|
| Factor | Unplanned | Planned | *t* |
| *now* /Clauses | .0647 | .0054 | 5.05 *** |
| *then*/ Clauses | .0141 | .0674 | -4.77 *** |
| *because*/Clauses | .0148 | .0133 | .38 ns |
| *finally*/ Clauses | .0046 | .0163 | -2.16 * |

**** $p < .0001$ *** $p < .005$ ** $p < .01$ * $p < .05$

Table 4. Differences in the frequencies of *now, then, because,* and *finally* in unplanned and planned narratives

These results reveal, as expected, a significantly higher frequency of *now* in the unplanned (on-line) descriptions, while a significantly higher frequency of both *then* and *finally* are found in the planned (off-line) descriptions, again as anticipated. However, there was no significant difference in the two conditions in terms of the relative frequency of *because*, suggesting that this form was not employed as a causal indicator, at least in this particular task. Thus, both *then* and *finally* are faithful indicators of planning, whereas *now* tends to be found in the unplanned versions.

One final difference between on-line and off-line descriptions was also investigated, that having to do with the sorts of verbal morpho-syntax found in the two types. In unplanned descriptions where the action is unfolding before the eyes of the narrator, we would expect to find a relatively larger number of progressive forms (he is *running, jumping, sitting*, etc.) than in the planned versions, since in the on-line cases the actions are unfolding before our eyes. Likewise, we would also expect to find more instances of the simple present tense in the on-line descriptions ('He shoots! He scores!') than in the off-line versions. Finally, we would expect to find more instances of simple past tense in the planned versions, since these are reported after the fact. These three distinctions were also examined, and the results are found in Table 5.

| | Means | | |
|---|---|---|---|
| Factor | Unplanned | Planned | $t$ |
| Progressives/Total words | .0398 | .0238 | 5.17 *** |
| Past tenses/Total words | .0159 | .0346 | -3.16 ** |
| Present tenses/Total words | .1542 | .0943 | 4.68 *** |

**** $p < .0001$ *** $p < .005$ ** $p < .01$ * $p < .05$

Table 5. Relative frequencies of progressive, present, and past tense forms in unplanned and planned narratives

These results indicate that, as expected, the frequency of progressive forms is higher in the on-line descriptions than in the planned versions, as is the frequency of the present tense. On the other hand, the frequency of the simple past tense is higher in the recalled versions, where the narrators are speaking from memory and are generally casting the descriptions in the past tense. However, caution is in order here, since more than half of the planned descriptions (11 of the 20) were produced in what might be called the 'historical present' in which the scene was described as if it were unfolding before the narrator's eyes at the time of the telling. Interestingly, men tended to use the historical present more often than women (eight to three).

One final matter should also be mentioned in passing: while an equal number of males and females participated in the study, and while there were considerable individual differences in the results, there were no systematic differences in any of the categories as a function of the gender of the speaker, other than in the use of the historical present for rendering the planned descriptions. Rather, the differences appeared to be associated only with the two types of discourse. With all these results now available, we can turn to a general discussion of the nature of planned versus unplanned discourse.

3. CONCLUSIONS. At the outset we must bear in mind that the unplanned narratives were necessarily always collected first. In contrast to the surprise factor associated with the on-line descriptions, the planned discourses were always provided from memory, In these narratives, there was an opportunity for each speaker to organize his or her thoughts, make judgments as to the overall structure of the scene, and then launch into an exposition. While such a narrative description is, of course, not at the most highly planned end of the planned/unplanned spectrum, it nevertheless is one which is immediate in the speaker's memory and is also one which the speaker is prepared in advance to describe.

We note that the obvious measures, those involving verbosity and grammatical structure, tend to follow in the directions previously suggested by Ochs and others: the unplanned discourses were far more verbose, with more main and subordinate clauses. However, the simple wordiness of the unplanned discourses can obviously account for the larger number of clauses of all types, since more words tends to produce more clauses.

What is of more importance, and what the present study is able to assess in a way that methodologies failing to control for topic cannot, is that here each participant serves as his or her own control, with each participant providing both an unplanned and a planned version of the scene. Moreover, the subject matter of all the discourses is constant. Thus, the present study avoids two pitfalls often found in similar studies of planned and unplanned discourse, namely that (a) the topics of planned and unplanned discourse are often quite different, with the obvious attendant problems, and (b) the participants are different, each bringing his or her own style to the task. Unlike most other studies, the present one holds both the topic and the participants constant, with the advantageous result that any differences which emerge in the two types of discourse can be attributed solely to factors associated with those two types and not to the subject matter or to differences in the narrators.

The results of the study also indicate that the planned versions tend to be more hierarchic in structure, evidenced by a greater degree of subordination, suggesting that in the planning, the narrators accessed their memory representations and organized their descriptions accordingly. Similarly, there were significantly more words per clause in the planned versions, a result which accords with a higher degree of elaboration on the part of the speaker when describing events. At the same time, the planned versions tend to have more fillers and repeated words per clause, a normal device for filling 'dead air' when a speaker wants to hold the floor while planning of the next utterance. Table 6 reveals the various diagnostics uncovered which tend to be associated with one or the other type of discourse.

| Feature | Planned | Unplanned |
|---|---|---|
| Syntactic Factors | | |
| Subordination | more | less |
| Relative clauses | more | less |
| Adverbial clauses | more | less |
| Verbal Morpho-syntax | | |
| Progressives | less | more |
| Past tense | more | less |
| Present tense | less | more |
| Lexical Factors | | |
| *now* | less | more |
| *and...* | less | more |
| *then* | less | more |
| *finally* | more | less |
| Other | | |
| Fillers | more | less |
| Repetition | less | more |

Table 6. Diagnostic Features of Planned and Unplanned Discourse

Finally, the planned versions are far richer in sentences linked with *and*, and *then*, again mirroring the fact that the memory structure is present and the speaker is playing it out. The unplanned versions, on the other hand, contain flatter structures, with a concomitant abundance of cues indicating the on-going changes in events (e.g., more *now*'s and progressive forms, less *then*'s and past tenses).

In summary, the present study has given empirical content and support to the claim that planned and unplanned discourse tend to vary systematically. Moreover, by virtue of the experimental design, it is possible to associate a variety of syntactic, morphological, lexical, and other diagnostic factors with one or the other type of planning, independent of the speaker or the topic. While a great deal more can be said for the planned/unplanned distinction, and a host of other variables can be (and are being) investigated, the present study provides a firm foundation and empirical support for some of the otherwise only intuitively based observations about the distinctions between the two types.

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# DISCOURSE FUNCTIONS OF A SENTENTIAL CONSTITUENT: END-WEIGHT AND TOPIC CONTINUITY

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This paper discusses various functions of the extraposition of a sentential constituent (S constituent). According to the rule of extraposition, an S constituent can be moved out of its subject position and to the end of a sentence. In its subject position *it* is inserted as an anticipatory subject:

(1) a. That the interface between the interactional software will go down while we are on line is virtually certain (Creider 1979:9).

b. It is virtually certain that the interface between the interactional software will go down while we are on line (Creider 1979:9).

(1)a and (1)b, however, have different effects. Creider (1979) claims that the leftward movement of an S constituent is for topicalization; and the rightward movement of it is for focus. So the effect of rightward movement of a sentential constituent in (1)b is that the constituent is being asserted and it is appropriate to answer the question: "What will happen when we go on line?" (Creider 1979:9). The notion that rightward movement is for focus fits perfectly well in these isolated sentences. However, it does not seem to work quite well in a discourse context.

A related notion to topic and focus is the notion of given versus new. The binary distinction in which topic consists of given information and focus consists of new information has been well-established. Quirk, Greenbaum, Leech, and Svartvik (1985) note that focus indicates where new information lies. They also note the tendency to place new information toward the end. Clark and Haviland (1977) state that focal stress falls on an element in the constituent that conveys new information. However, this binary distinction has been challenged (e.g. Green 1980). My examples also challenge this correlation as far as the function of the leftward and rightward movements of an S constituent is concerned.

This paper investigates discourse functions of an S constituent among 53 examples from five academic books[2]. The data show that an S constituent has its own properties. An S constituent is itself a sentence with subject and predicate, the information structuring of which is partially given and partially new. Therefore, a binary distinction between the given and the new cannot sufficiently explain the motivation for an extraposition. This analysis concludes that there are other important factors influencing the extraposition of an S constituent, such as gaining end-weight, and placing an S constituent in a position which will maintain the continuity of a thematic topic.

**I. Problems with Creider's claim.** The fifty-three examples are examined and analyzed in a discourse context. The result shows that the rightward movement of an S constituent does not necessarily provide information that is being asserted or new. Contrary to Creider's claim, these examples show that S constituents convey partially given and partially new information.

When an S constituent is in a topic position it does not necessarily convey given information; in most cases only the subject of an S constituent conveys given information, as in (2):

> (2) Whether we consider the metaphorical functioning of *Absalom and Achitophel* to be that of a parallel, analogy, or an allegory, the metaphor is remarkable for three things. It is "closed" to an almost unbelievable extent... The two other important features of the metaphor seem quite incompatible with this. **That a closed metaphor should all the same exchange the roles of its tenor and vehicle, and that it should at times coast along with neither functioning in more than presumption is a situation in theory all but impossible**. Since Dryden's practice is of this kind... (Miner 1967:113)

In (2) the two parallel S constituents convey partially given and partially new information. The topic within the two constituents, *a closed metaphor*, is known to the addressee, while the rest of the information is completely new. We can test the nature of the information by combining the two elements together into a sentence: "The two other important features of a 'closed' metaphor are that...and that..." It seems clear that the predicates of the two S constituents convey new information about the features of a "closed" metaphor. A question can also be asked: "What are the two other features of a 'closed' metaphor?" The answer would be the information that is being asserted. Although the two S constituents are in a sentence initial position reserved for topic, the major part of the two S constituents convey new information. The fact that an S constituent in a topic position conveys new information triggers a question: "Is it virtually true that the kind of information an S constituent conveys is not affected by extraposition?" Without extraposition an S constituent still provides asserted information, the information that is new to the addressee. The following is a similar example:

> (3) That Dryden sought some unifying conception cannot be doubted, as his title shows... Since in the Preface to the *Fables* he speaks of the "ribaldry" in many of Chaucer's "novels," it can be seen that in one instance or another he has referred to the

> Chaucerian poems as tales, novels, and fables. **That the generic term finally chosen was, on this slim evidence, merely the most attractive, or possibly the most inclusive, may be conceded** (Miner 1967:290).

In (3) *the generic term finally chosen* stands for *Fables*, the title Dryden has chosen for his poems. This piece of information is mentioned in the previous context repeatedly. Moreover, the definite article also provides a clue that it is a piece of given information. The following comment, that it is the *most attractive* and *most inclusive*, is a piece of new information provided by the addresser. The S constituent in this case conveys some given information followed by the major part of the new information. With regard to the whole sentence it is this partially given and partially new information that takes a topic position. Let's consider the following example in which a sentence initial S constituent does convey old information:

> (4) "...I would say that probably black and white vernaculars are diverging in some ways and converging in others...." **That we should find BOTH convergence AND divergence is not at all surprising**, given the continuous historical patterns of partial societal isolation AND partial contact between Whites and Blacks . It is also not surprising that... (Butters 1989:4)

In (4), the S constituent repeats almost the same information. The focus lies on the word *all* in the VP constituent, to show that convergence and divergence is by no means surprising. The data show that a sentence initial S constituent that provides only given information is rare; only one such example has been found.

Next, I will discuss examples with the rightward movement of an S constituent. Although the S constituent is in a focused position, this position is not necessarily reserved for assertion only.

> (5) The question of Dryden's imagery is connected, of course, with that of his "metaphysical" qualities. **It has always been recognised that there is a metaphysical element in his poetry**, but it has usually been regarded as something vestigial... (Jefferson 1969:24)

*A metaphysical element in his poetry* is mentioned in the previous sentence, so it is not considered a piece of information being asserted. The rightward movement of the S constituent does not result in the provision of new information; it merely functions to maintain the thematic topic of *metaphysical element* and allows it to flow to the next sentence.

Example (6) is typical, showing that a rightward S constituent, like a sentence initial S constituent, conveys partially given and partially new information. It is the subject of the S constituent that provides given information; only the predicate of that constituent is being asserted.

> (6) The Hastings elegy makes it clear that Dryden, at this stage, was uncertain about the couplet. His uncertainty persisted for testing the usefulness of the example offered by Davenant's *Gondibert*...**It seems probable, though not strictly demonstrable, that uncertainty about the conceit and uncertainty about the couplet went hand in hand and were quite significantly related** (Hoffman 1969:51-52).

*Uncertainty about the conceit and uncertainty about the couplet* is familiar to the addressee. It has been discussed continuously in the previous context. What is important is the asserted part in which *they went hand in hand and were quite significantly related*.

Having examined these examples of rightward S constituents, I notice that sentences with a rightward S constituent have basically two information units: a VP constituent, and an S constituent. It seems that, regardless of an S constituent's being topicalized or focused, the VP constituent always provides new information. So it is usually the case that both the VP constituent and part of an S constituent or, in some cases, the whole S constituent, convey new information. This property allows sentences of this kind to frequently appear in a paragraph initial position, as a new paragraph usually starts a new subtopic of a theme:

> (7) We may begin by touching upon some of the structural characteristics of the poem.... The introduction of the Panther only after the sectarian beasts is not merely climactic in Part I.... In itself, Part II is a controlled piece of steady tonal elevation. The patterning of Part III is clearer in the parallel sections of debate followed by parallel sections of fables...
>
> **It can be seen, therefore, that it is a considerable oversimplification to characterize the temporal orders of the successive parts as past, present, and future.** There are many exceptions (Miner 1967:193).

It is clear in (7) that both VP constituent and S constituent provide new information with the focus falling on an element in the S constituent. The VP constituent, *it can be seen*, provides new information. It functions to call the addressee's attention to the forthcoming statement, and shows that it is a fact and it is obvious.

The function of *it*, an anticipatory subject, as being suspenseful is shown in examples of this kind, when the information contained in an S constituent is not topic-related but focus-related and, therefore, is new and unpredictable. Since *it* is again coreferential with the S constituent, this property of being unpredictable passes on to *it*. With *it* at the beginning of a sentence, it has the effect of suspense and emphasis. *It* holds the addressee's curiosity and attention until s/he gets the important information in the end. In this regard, it is more rhetorically effective to begin a sentence with *it* than with a sentence initial S constituent.

In the above discussion I have given examples to show that there are problems with Creider's claim. The generalization that rightward movement of an S constituent is for focus and for assertion may not be an adequate explanation. I have shown that an S constituent behaves differently from other constituents in that it has layers of information structuring in which some elements are relatively given and some are new.

**II. End-Weight**. S constituents are usually moved to the right for practical reasons such as end-weight. In such cases the rightward S constituents simply function to balance the sentence. The fact that balance seems to be a motivation for the rightward movement of an S constituent is not too simple to be worth mentioning, for it also reveals something of significance.

According to Quirk, Greenbaum, Leech and Svartvik (1985), most S constituents appear in sentence final position for the sake of end-weight. Examples from my data show that this motivation of end-weight plays an important role. The question is: "Why do some sentential constituents require rightward movement while others do not?" "What is considered to be heavy?" The examples of sentence initial S constituent show that, when these S constituents appear in sentence initial position, they do not destroy the balance. This is either because a particular S constituent is not heavy, or because a short VP constituent is followed by other 'heavy' adverbial constituents which serve to keep the sentence in balance. The following examples show this:

(8) a. That what is expressed here is personal cannot be doubted (Miner 1967:62).

b. That we should find BOTH convergence AND divergence is not at all surprising, given the continuous historical patterns of partial societal isolation AND partial contact between Whites and Blacks (Butters 1989:4).

c. That he did not, and that in this one instance he chose an extreme position is quite simply due to the fact that without this fuller authority Rome could not have attracted him from Canterbury (Mine 1967:189).

In (8)a, the S constituent is not so heavy as to require a rightward movement. In (8)b and c, VP constituents are all followed by other constituents so that balance is achieved.

Examples of rightward S constituents further reveal this motivation of end-weight. For heavy S constituents, the rightward movement functions to take care of the relationships of all the different elements in a sentence.

(9) a. It's just possible that a traditional slash-the-liberals campaign --with nothing else to soften it or give a sense of optimism and energy--will seem too jagged, too desperate and too obviously beside the point to work in 1992 (Newsweek 8/31/92:26).

b. It seems a reasonable conjecture, at any rate, that the older Dryden's fondness for these devices had its roots in his early work as a poet, and that the overriding of the couplet in *Astraea Redux* was to be tamed and licensed but never extirpated (Hoffman 1969:64).

c. It can be seen that his lyric poetry gives, as it were, musical versions of some of the major themes of his plays and his nondramatic poetry, apart from the lyrics (Miner 1967:285).

The S constituents from (9)a to c all involve weight. The weight is expressed in various ways: in (9)a, further information inserted inside the sentence together with three parallel adjectival phrases makes the S constituent heavy; in (9)b, the two coordinate S constituents make it heavy; in (9)c, within that S constituent there is a syntactically complex structure. The relationships of the elements are more easily understood by moving the heavy constituent to the end.

In observing the only five examples which appear in paragraph final position, it should be noticed that they all end with an S constituent in a sentence final position, even though some are not really heavy. One possible explanation is that such arrangement makes the paragraph balanced. No example was found with an S constituent in a sentence initial position to appear in paragraph final position, which makes sense, as it would be out of balance for a short VP constituent to complete a paragraph. For example:

(10) a. But it may again be insisted upon that any reader who sits down with the complete *Fables* and their originals will quickly see how Dryden's changes are part of a general practice leading to the principles of integration (Miner 1967:300).

b. It was obvious that, for this parent, as for many others, the job of education rests entirely with the school (Newsweek 9/21/92:A4).

c. It is evident to anyone that he devoted much of his genius and

> his feeling to such tragedies as ***Aureng-Zebe, Don Sebastian, Cleomenes,*** and even ***Oedipus***. It seems equally evident that for all his lament of his saturnine humor he enjoyed laughing at, or even mingling with, the absurdities of man as he revealed them to be in ***Marriage A-la-Mode***, in ***Amphitryon***, and even in so mindless a ***jeu d'esprit*** as ***Sir Martin Mar-All*** (Miner 1967:69-70).

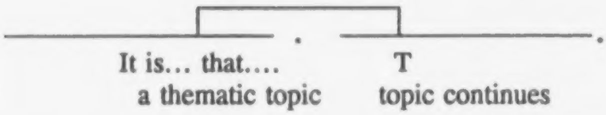
Note (10)c: the paragraph ends with two *VP + S constituent* sentences. The parallel structure conveys two pieces of information of equal importance or with an increasing importance toward the second parallel sentence. They both are presented as factual information. This parallel structure places a lot of weight at the end of the paragraph.

**III. Topic Continuity.** The term *topic continuity* is used here differently than usual. Traditionally, *topic continuity* refers to the fact that the succeeding topic has a referent in a current clause as a topic, and the current topic again has the same referent as the topic in its preceding clause, and so on. The same topic can be traced back to its left end. For example:

(11) **John** entered the room. **He** saw the little girl. **He** bent down. **He** offered the child a toy.

*He* follows the preceding topic and is traced back to *John*. The topic *John* persists continuously through four clauses. In fact, topic continuity means participant continuity; it is one of the three discourse continuities (Givon 1983:7).

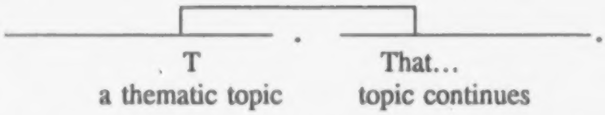
I extend the term *topic continuity* to mean that there is a thematic link between either the preceding clause and the current clause, or the current clause and the succeeding clause; a link shows a series of ideas developing and increasing in sophistication, complication and extension, showing branches of a large, controlling idea. In this analysis, we can ignore the given versus new and topic versus focus distinctions; we can assume that if the thematic topic of an S constituent is closely linked to that of its preceding clause, a sentence initial constituent is used; if the thematic topic of an S constituent is closely linked to that of a succeeding clause, extraposition of an S constituent occurs. This device can express a connection and a natural flow of information regardless of whether rightward movement is used for assertion or not. If we consider thematic continuity as a determining factor, whether a piece of information is given in a focused position is less important, as some information has to be repeated to pave the way to further commentary and further development. In this way, the VP constituent is treated as if it were a disturbance to the thematic topic continuity. The movement of an S constituent is in fact the movement of a VP constituent. Whenever it disturbs the flow or chain of topic continuity it gets out of the way. The following diagram shows this relationship, followed by an illustration in (12):



(12) The question of Dryden's imagery is connected, of course, with that of his "metaphysical" qualities. It has always been recognised **that there is metaphysical element in his poetry**, but **it** has been regarded as something vestigial… (Jefferson 1969:24)

In (12) the S constituent continues the thematic topic of a preceding clause. As this topic continues, it shows a more closely linked relationship with the succeeding clause. So the S constituent that expresses this topic moves to the end. The close link is achieved and is evidenced by the use of pronominal *it* in its succeeding clause. *It* functions both as thematic continuity and topic/participant continuity in the succeeding coordinate clause.

With regard to the sentence initial S constituent, the thematic topic is closely linked to its preceding sentence. The theme, the controlling idea, is introduced by the previous clause and continues to be the theme, the main idea, in the S constituent, as in the following diagram with an illustration in (13):



(13) **He could have chosen to compromise, obscure, or completely ignore the issue. That he did not, and that in this one instance he chose an extreme position is quite simply due to the fact** that without this fuller authority Rome could not have attracted him from Canterbury. It was this assurance of belonging to Christ's Church, which… (Miner 1967:189)

In (13) the topic is brought up by the previous sentence, and continues to be the topic in the form of two parallel S constituents. In this case the thematic topic of the S constituent is not as closely linked to its succeeding clause as it is to its preceding clause, because the succeeding clause switches the focus from Dryden's extreme position to his assurance of belonging to Christ's Church.

It seems that what decisively determines the choice between leftward and rightward movement is the factor of the link with regard to thematic topic continuity; that is, the preceding and succeeding discourse context will decide which one should be put where. Leftward S constituents convey topic information which is either brought up by the preceding clause (if so it is given information) or starts a new branch of a series of ideas, which are in the process of developing, but are thematically related. Rightward S constituents serve either to develop a new aspect of a related idea or to repeat an old idea for further discussion. The thematic topic expressed by the rightward S constituent will continue to develop in its succeeding clause and shows a close link. It is this thematic continuity that determines the choice. The opposite arrangement will cause discontinuity.

The study of paragraph initial examples reveals something significant. A total of sixteen examples appears in paragraph initial position, two of which are sentences with leftward S constituents, and fourteen of which are sentences with rightward S constituents. The basic feature of the latter kind is that a short VP constituent serves as a relator whose function is to introduce an S constituent that conveys a topic, a subject, and a controlling idea for a whole paragraph. That subject may be brought up in a previous paragraph, and needs new and further development, or that subject may also be a new thematic topic. Whether the topic is old or new, the S constituent is always closely linked to its succeeding clauses, as the S constituent is the focus of a thematic topic, around which the paragraph is developed.

(14) a. The allusion shows us how the two major characters of the poem can pretend to any of the values suggested by the words *monarchy*, *art*, and *religion*. We need no special knowledge of Dryden's own views to guess that there are values of permanent importance to him.

**It is true, however, that allusion requires sharing knowledge with the poet if the allusion is to function as allusion**. Without such a recognition, we may enjoy more or less of a work, but we miss something (Miner 1967:96).

b. **However, that allusion requires sharing knowledge with the poet if the allusion is to function as allusion is true**. Without such a recognition, we may enjoy more or less of a work, but we miss something.

(15) a. **It is the case...that the religious change can be represented by *Religio Laici* and *The Hind and the Panther*.** The two poems possess many of the same terms of intellectual and religious reference (Miner 1967:177).

b. **That the religious change can be represented by *Religio***

***Laici* and *The Hind and the Panther* is the case. The two poems possess** many of the same terms of intellectual and religious reference.

The above examples show that both sentences a and b sound grammatical (looking only at the sentences with S constituents). But when they are put into a context (14)b and (15)b do not sound as good as (14)a and (15)a. The reason for this is that in (14)a and (15)a there is a strong connection between the information in the rightward S constituent and the information at the beginning of the next sentence. They are thematically connected. For example, in (14) *allusion* is an idea mentioned in the previous paragraph, and it becomes the topic in the following S constituent. The idea develops in the predicate of that S constituent. Finally *such a recognition* includes all the ideas that the S constituent conveys; that is, *allusion requires sharing knowledge with the poet if the allusion is to function as allusion.* The close link is realized by the S constituent immediately followed by *such a recognition*. Such an arrangement has the effect of topic continuity. In (15)a *Religio Laici* and *The Hind and the Panther* are immediately followed by *the two poems*, and *the two poems* becomes the topic in the succeeding sentence. (14)b and (15)b destroy this continuity, for with a VP constituent at the end of the sentence, it causes discontinuity.

To examine the function of topic continuity further, I will discuss examples that start with a sentence initial S constituent.

(16) a. Certainly the metaphorical biblical sequence is as true, as real, as the "antic sights and pageantry" of contemporary England. It had a claim to be thought truer. It was not only complete but also divinely revealed, giving it the force of God's judgment to evaluate subsequent event, "if we have judgment enough but to draw the parallel."

**That Dryden drew the parallel he did was natural in that he had ample precedent**. But it was not inevitable... (Miner 1967:107)

b. Yet another nautical significance is implied, as a triplet from The Hind and the Panther on the hesitant Swallows makes clear:

> Nor need they fear the dampness of the sky
> Should flag their wings, and hinder them to fly,
> 'T was only water thrown on sails too dry.

**That such similes have the sanction of epic practice seems less important** than their ability to function figuratively in ways

> different from strict metaphor. Different modes of comparison serve different ends (Miner 1967:20).

In (16)a the motivation for placing an S constituent in sentence initial position is clear; it links the idea of *drawing parallel* from the previous paragraph to the present paragraph. Although the fact that *Dryden drew the parallel he did* is a piece of information which cannot be predicated by the addressee, and which is supposed to be the information to be asserted, the writer still puts the S constituent in paragraph initial position. The writer perhaps treats the link between ideas as a priority in considering extraposition in this case. In the previous paragraph the writer cites Dryden's own words, such as "we cannot easily be deceived in the effects, if we have judgment enough but to draw the parallel" to make the comment that "Dryden drew the parallel he did." This device, on the one hand, makes close connection between Dryden's idea and Dryden's own practice, and on the other hand, gives the new information forcefully to the reader that Dryden did what he said.

Between the rightward VP constituent and the following sentence there is another connection. *Be natural* paves the way for further comments. It provides the contrast between what it is natural but not inevitable.

In (16)b the fact that such ideas as 'such similes have the sanction of epic practice' is obvious in the actual lines of the poetry. The poem introduces this idea first, and this controlling idea continues in the S constituent. Another connection lies between the VP constituent and its succeeding clause. The VP constituent serves to compare two things: one is less important than the other. If this VP constituent is put in an initial position there will be a discontinuity between the elements being compared.

The connective effect is further demonstrated by such words like *such*, *this*, and *so* immediately following an S constituent:

(17) a. ...**it was inevitable that they should suggest its connection with persuasive and dissuasive writing. Such** was the reason for introducing the discussion to begin with (Miner 1967:291).

b. **It is significant that the life of the monster fire brings death. This** almost causal sequence of the life of the rebellious fire producing death differs from... (Miner 1967:24)

c. **It might be objected that whether one sense of a word is to be regarded as derivative from another sense of that word should be treated as a question about the history of the language to which the word belongs. This** may be so in general... (Grice 1989:47)

Note that *such*, *this* and *so* never include the idea expressed by the VP constituent. They are used to be coreferential with the S constituent only. In (17)a the S constituent introduces the kind of idea which is used as a topic in its succeeding clause. Therefore the thematic topic continues. In (17)b *this* + *Noun phrase* elaborates the previous information in detail; by the same token it continues the topic. In (17)c *this* stands for the statement conveyed by the previous S constituent. This statement thus becomes the topic in the clause. The two sentences are closely connected.

**IV. Conclusion.** To summarize, I have argued that old versus new correlated with topic and focus is not a sufficient explanation for distribution of leftward and rightward S constituents. S constituents constitute different layers of information structuring; they are able to convey partially given and partially new information. I have shown by data analysis that two other factors may prove to be more applicable in explaining the motivation for leftward and rightward movements of an S constituent. These two factors are the function of gaining end weight, and the function of maintaining thematic topic continuity.

## Notes

[1] I would like to express my thanks to Professor Elizabeth M. Riddle for her valuable advice and comments. All errors are my own responsibility.

[2] The process of data collecting involves picking out all S constituent structured sentences as they occur in selected number of pages in the five academic books.

The process shows that extraposition of a sentential constituent seldom occurs in informal speech. *Working* by Terkel (1975), which is supposed to be a real life recording of all kinds of interviews and casual speeches by people of different professions, cannot provide any examples for investigation. The source is from books of academic writing such as *Studies in the Way of Words* by Grice (1989), and literary criticisms like *Dryden's Poetry* by Miner (1967). In these academic writings I even found examples of sentence initial sentential constituent, which makes it possible to compare leftward and rightward S constituent in terms of discourse function. The process of data collecting reveals that the kind of form or writing style decides the occurrence of this structure. Because this structure presents information for argumentation, supposition, commentary, summary, and etc., depending on the kind of meaning the VP constituent conveys, it frequently occurs in formal writing. Though I have not done any research in this area, I doubt its high frequency of occurrence in narrative and descriptive writings due to the nature of information this structure provides.

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# NEGOTIATION AND MANAGEMENT OF CONFLICT IN KOREAN CONVERSATION

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## 1. INTRODUCTION

People are unique in that they have different ideas and opinions. When these different and opposing views are expressed, there is interpersonal conflict within which arguments, disagreement, and others can arise. Argument is "discourse through which speakers support disputable positions" (Schiffrin 1987:18). An important aspect of argument is disagreement, which is a threat to the hearer's positive-face want (Brown and Levinson 1987:66), thus, avoiding disagreement is understood as a positive politeness strategy. In verbal conflict situations, where power and language articulate in complex ways, social and cultural factors have been claimed to play a significant role (Brenneis 1988, Grimshaw 1990, Schiffrin 1984, 1990, Song 1993, etc.).

Korean culture has traditionally emphasized the importance of politeness and harmony in every aspect of life; establishing and maintaining harmonious interpersonal relationships is very important in Korean social interactions. Expressing opposition and having arguments with interlocutors are highly face-threatening acts, so Koreans make efforts to minimize disagreement and avoid conflicts. This study explores the question of how Koreans negotiate and manage conflict.[1] Based on naturally occurring conversations among Korean adults, this study will investigate the ways in which Koreans employ various discourse strategies in negotiating disagreement and managing conflict.[2]

## 2. ANALYSIS

My analysis shows that Koreans express their opposition and manage conflict in a wide variety of ways. My study claims that argument should be understood with regard to continuity rather than to a twofold distinction. In other words, oppositional remarks and argumentative conversational exchanges are distributed on a continuum, from the most aggravated to the most mitigated argument. Argument strategies employed among Korean speakers fall into two categories: (1) multifunctional argument strategies, those that can serve either as a way of expressing relatively more direct and explicit opposition in an aggravated manner, or as a way of expressing relatively more indirect and inexplicit disagreement; and (2) nonconfrontational argument strategies, those that serve primarily as a means of expressing indirect and inexplicit disagreement. These strategies will be discussed with focus on how these strategies are employed in aggravated argument and mitigated argument.

### 2.1. AGGRAVATED ARGUMENT: REPETITION, QUESTION, INTERRUPTION, AND OPPOSITIONAL DISCOURSE MARKERS

In aggravated argument, in which speakers directly express their disagreement, Korean speakers employ various discourse strategies to negotiate and manage conflict: the use of repetition, questions, interruption, oppositional discourse markers, etc. When speakers disagree with other conversants, they often repeat themselves and other interlocutors to achieve various interactional goals: supporting and intensifying their own claims, establishing mutual involvement, defending themselves, and/or challenging opponents (Pomerantz 1984a & b, Kuo 1992, Song 1993). Instead of saying that they do not agree, speakers often raise questions to their interlocutors (Brown & Levinson 1987, Pomerantz 1984a & b, Kuo 1992, Song 1993). By raising questions, a speaker can undermine and challenge opposing propositions, defer expression of disagreement, and/or mitigate face-threatening danger.

Examples of a speaker's use of repetition, questions, interruption, and oppositional discourse marker in aggravated argument appear in Excerpt 1. Concerning the issue of raising funds to help singles group members, the president of the group, Gwangsu, asks members to talk about whether they will raise funds or not. Chinwoo claims that the group should not undertake any fund-raising activity because the group will inevitably break up when money becomes an issue. In contrast, Oksoon supports the proposal to hold a fundraiser. Whereas Chinwoo keeps repeating his point (lines 3,7,12; 5,10), Oksoon not only repeats her own positions (15,17,20), but also repeats part of Chinwoo's lines (8,13) and raises a question to challenge him (8). Both Chinwoo and Oksoon begin their turns with the oppositional discourse marker *kulentey/kuntey* (contracted form of *kulentey)* 'well/but' (double-underlined in lines 3,9,11,13,15).

[Excerpt 1][3]

(1) Gwangsu: *iltan hanta an-hanta pwute com yaykiha ko,*
first do not do first more talk and
'First of all, we need to talk about whether
we will do it or not,'

(2) *Ku taumulo kucheycekulo nemekase,*
that next in detail follow
'and then, we can go into detail.'

(3) Chinwoo: *Kulentey, yekise mwel ha-myen an-tway-yo.*
well here what do if not good SFM
'Well, we should not do anything here,'

(4) Gwangsu: [fund-raising-*lul*
Obj.
'fund-raising'

(5) Chinwoo: *Ton- i kayiptoyki-ttaymwuney.*
money Nom. involved because
'because money is involved.'

(6) Gwangsu: *Ani, wusun kuken taumey.*
no first that next
'No, that can come later.'

(7) Chinwoo: *mwel ha-myen an- tway-yo.*
what do if not good SFM
'We should not do anything.'

(8) Oksoon: *WAY mwel ha-myen an-tway-cyo?*
why what do if not good Q'SFM
'WHY shouldn't we do anything?'

(9) Chinwoo: *Kuntey, salam-iyo,*
but people SFM
'Well, I'm talking about people,'

(10) *ton- i kayiptoyki-sicakha-myen kkayche-yo.*
money Nom. involved started if broken SFM
'when money is involved, the group dynamics break down.'

(11) Oksoon: *Kuntey, wuli-ka cikum*
but we Nom. now
'but, now, we '

(12) Chinwoo: *Ilen saep -ha-myen an-tway-yo.*
this business do if not good SFM
'We should not do this kind of business.'

(13) Oksoon: *Kuntey, wuli-ka cikum SAEP-ul hanunkey anila.*
but we Nom. now business Obj. doing not
'But now, we are not doing a BUSINESS.'

(14) Chunho: car wash *kathun-kes coh- chan-ayo?*
like thing good TAG Q'SFM
'Something like a car wash is OK, isn't it?'

(15) Oksoon: *Kulentey, nay cokumahan sikan-ul pongsaulhay*
well my little time Obj. volunteer
'Well, we'll contribute a little of our time, and'

(16) *wuli-ka tto ilehkey ton -i philyoha-nikka,*
we Nom. and like this money Obj. need because
'because we need the money, in a situation like this,'

(17) *nay cokumahan sikan-ul pongsahayse,*
my little time Obj. volunteer
'we'll contribute a little of our time, and'

(18) *wuli-ka ku* fund-*lul* raising *ha-nunkey,*
we Nom. that Obj. do that
'we'll raise funds, so'

(19) *Mwe pakkeyse hanun mwe ton iyaki hakonun*
what outside doing what money talk with

(20) *Com talun- kes, talen- kes kathhay-yo.*
little different thing different thing seem SFM
'19-20: This seems a little bit different, different
from what other people are talking about.'

(21) Bintae: *Machsupnita!*
That's right!
'That's absolutely right!'

In (3), Chinwoo states his position and provides his reason in (5). After making an oppositional statement toward Gwangsu's proposal, Chinwoo is interrupted by Gwangsu in (6). However, by repeating himself in (7), Chinwoo shows his persistence in maintaining his claim. Chinwoo's self-repeated proposition is immediately repeated by Oksoon in (8). In addition to repeating Chinwoo's utterance, Oksoon raises a question in direct challenge to him by asking his reasons for not wanting to hold a fundraiser.

Then in (9) Chinwoo opens with the oppositional discourse marker *kuntey* to provide evidence for his claim by repeating what he has already said in (5). He is immediately followed by Oksoon in (11), where she also starts with the oppositional marker *kuntey* 'but.' In (12), Chinwoo interrupts her and restates his point. Utterance (12) is a repetition of (3) and (7). After being interrupted by Chinwoo even before stating her point, in (13) Oksoon takes her turn back with *kuntey* and opposes him. By making an immediate repetition, Oksoon connects her claim to Chinwoo's prior talk and disagrees with his claim. After challenging Chinwoo by making two immediate allo-repetitions in (8) and (13), Oksoon repeats herself in (15, 17 & 20) and continues to advance her justification for a fundraiser.

### 2.2. MITIGATED ARGUMENT

In mitigated argument, where speakers indirectly and inexplicitly voice their disagreement, speakers employ non-confrontational strategies such as (1) disagreeing playfully, (2) constructing dialogues, (3) reporting opinions, (4) telling personal experiences, and (5) using silence.

### 2.2.1. DISAGREEING PLAYFULLY

Opposition is expressed by Koreans not only in emotionally charged tones, but also in playful tones; speakers make a tense and serious situation less tense by provoking laughter among other discussants (Song 1993, 1994). An example of playful disagreement appears in Excerpt 2, from a conversation on membership dues. The treasurer of the group, Chuljin, requests that members pay their dues on that day, which is the last Sunday of the church fiscal year. Chuljin makes this statement in a somewhat emotionally charged tone, and the situation is rather tense. Responding to Chuljin's request to pay the membership dues on that day, Subong makes a playful disagreement in challenge to Chuljin.

[Excerpt 2]
(1) Chuljin: *Kanunghamyen onul say hoykenyento nemekaki ceney*
if possible today new fiscal year pass to before

(2) *ta naycwu-si-myen kamsaha-kess-upnita.*
all give H'Inf. if thank will SFM
'1-2: I would appreciate it if you would possibly pay the
membership dues today, before passing to the next fiscal year.'

(3) Subong: *Kulemyen ONUL-MAN nemki-myen toykess- nay!*
and then today only pass if possible SFM
'Then, if I make TODAY pass, everything will be fine!
(If I only wait until TODAY passes,then everything will be fine.]
[laughing, with laughter from participants]

(4) Chuljin: *Ani-cyo!*
no SFM
'No!'

Subong says that if he could 'pass over only TODAY' (*ONUL-man nemki-myen*), he would not have to pay the membership dues ever again. By repeating the key words *onul nem* 'passing today' in Chuljin's utterance, Subong makes an oppositional claim and defends himself; consequently, he elicits laughter from the participants. Subong's playful disagreement is further evidenced in his laughter and his deletion of a sentence-final marker. If Subong were serious about his proposition, he would use a sentence final marker, which is normally obligatory in Korean. Chuljin responds to Subong's playful disagreement with disapproval.

### 2.2.2. CONSTRUCTING DIALOGUES

Constructing dialogues is another conflict-management strategy in Korean (Song 1993). In oppositional conversation, speakers not only express their opinions from their own points of view, but they also present what third parties said in constructed dialogues (Tannen 1989). Constructing dialogues of third parties enables speakers to avoid potential confrontation, invite support from participants, establish the involvement of other participants, and/or make the situation more vivid. In Excerpt 3, for example, a young man wants to attend a seminary to become a minister in defiance to his parents' request that he attend a general university. Minister Park argues that the man should go to the seminary for three reasons. Instead of presenting those three reasons in his own words, Minister Park constructs dialogues (" ") of what the man under discussion said.

[Excerpt 3]
(1) Mr. Park: Yekise iyakihanun kesun i haksayng-un
here talk about thing this student Nom.

(2) *ilpan tayhak- ul kanun kyengwuenun,*
general university Obj. go in case
'1-2: What is being said here is that if this
student goes to a general university,'

(3) *caki-nun "sikan-ul nangpihanta" ikes-eyyo.*
self Nom. time Obj. waste thing SFM
'he says, like, "I'm wasting my time."'

(4) *"Nay-ka ilpan tayhak -ul kase paywul ttay"*
I Nom. general university Obj. go learn when
'"When I go and study at a general university"'

(5) *"ikes -i mokhoy- lul hanuntey cenhye"* -->
this Nom. ministry Obj. do totally

(6) *"towum-i an toynta" ikes-eyo.*
help Nom. not be thing SFM
'5-6: "what I learn from a general university would
not be helpful to my ministry at all," it's said.'

(7) Taeok: *Kulekchiman, sikan-cekulo*
however time wise
'However, in terms of time'

(8) Mr. Park: *Sikan-to kuleko,*
time also so
'That's true of time, too,'

(9) *"Na-n" caki-ka"interest-ka mokhoyhantey isci"*
I Nom. self Nom. Nom. ministry be
'He says like,"my own interest is in working
in a ministry, so"'

(10) *"4-nyen tongan nay-ka ilpan- tayhak- eyse*
year during I Nom. general University in

(11) *"istako hanunkesun cohchika anta" nunkes-eyo.*
stay doing good not that SFM
'10-11: "my staying four years in a general
university is not good." it's said.'

Minister Park points out the first reason for his claim by constructing what the young man said in dialogue in (3); the second reason in (4-6); and the third reason in (9-11). Minister Park uses the direct quotation markers, *ikes-eyyo* 'is said' in (3) and (6), and *nunkes-eyo* 'is said' in (11). By presenting utterances of the person under discussion, Minister Park indicates that his claim is based on what the person has said, thereby making the situation more vivid and to inviting support from participants.

### 2.2.3. REPORTING OPINIONS

Reporting opinions of the third parties is also a strategy for negotiating conflict in Korean (Song 1993). By reporting the opinions of a third party, speakers can distance themselves from their propositions and yet support their own claims. Excerpt 4 continues the discussion about the young man who wants to go to a seminary to become a minister. Whereas some members have supported the young man's wish to go to the seminary, a female participant, Wonkyong, argues that the man should go to a general university. She supports her claim by stating what other people have said instead of expressing her own opinion.

[Excerpt 4]
(1) Wonkyong: *ilpan tayhak -ul ka-yahay-yo.*
general university Obj. go must SFM
'He must go to a general university.'

(2) *i cemuni-ka ilpantayhak -ul kako nasenun,*
this young man Nom.general univ.Obj. go after
'After this young man goes to a general university,'

(3) *cwunim-i ha-si- koca ha- si- myen,*
Lord Nom. do H'Inf.intend to do H'Inf. if
'if the Lord wants to (choose him in His ministry), then'

(4) *ilpan tayhak- ul kase calling-i is-tako*
general university Obj. go Nom. be that
'there'll be a calling from God, even after he goes
to a general university.'

(5) *kulehkey yayki-lul tul- ess -eyo.*
that story Obj. hear PAST SFM
'That's what I heard.'

Wonkyong states her stance in (1) and gives a reason for her claim in (2-5). The basis for her claim is that even if the young man goes to a general university, he will receive a calling from the Lord if He plans to choose this young man for His ministry, and then he can attend a seminary. This justification for her claim is not her own, but what she has heard from other people. By saying (5), she tries to distance herself from the proposition.

### 2.2.4. TELLING PERSONAL EXPERIENCES

Telling personal experiences is another conflict management strategy (Brown and Levinson 1987, Polanyi 1985, Song 1990a, b,c, & 1993, Schiffrin 1990). When Korean speakers get involved in an oppositional verbal exchange, they often tell stories or personal experiences to present evidence countering a prior speaker's claim, as well as to support their own claims, as shown in Excerpt 5. Concerning Gwangsu's proposal to hold a fundraiser for group members in financial difficulties, Minister Lee has argued in favor of holding a fundraiser not to help group members, but to support missionaries and the general public. Instead of directly opposing Minister Lee, who is older and occupies a higher position in the group, Gwangsu rather tells his personal experience of fund-raising in (3-8).

[Excerpt 5]
(1) Mr. Lee: *wuli cachey-uy ilenkesun -->*
we own Poss. these

(2) *chom te cihyelopkey hanunkey cohci an-kesna.*
little more wisely doing good not might
'1-2: we should be more careful if we raise funds
for our own group.'

(3) Gwangsu: *Cey-ka talun cwu- ey issul-ttey*
H'I Nom. different state in reside when
'When I was in another state,'

(4) *chengnyen-hoy-ka 10-myeng-to an-toy-ess-nuntey,*
singles club Nom. person even not be PAST though
'my young adults' group had fewer than ten members, but'

(5) fund-raising *ha-essul-ttey,*
do PAST when
'when we had a fundraiser,'

(6) hamburger *to kwup-ko* hot-dog *to phal -ass-eyo.*
also grill and also sell PAST SFM
'we grilled hamburgers and sold hot-dogs.'

(7) *1000 pwul- ul ollyoessnuntey kulayse*
dollar Obj. raise and so
'We raised about $1,000, and'

(8) *kyohoy-e* mike system-*ul wuli-ka haycwu-ess-eyo.*
church in Obj. we Nom. give PAST SFM
'we donated a microphone system to the church.'

(9) *Cham polamiss-ess-eyo.*
really worthwhile PAST SFM
'It was very worthwhile.'

(10) *Wuli-ka ilenkes-un sayngkakhaki nalum-ieyo.*
we Nom. this Nom. think depend SFM
'It depends on how we think of this.'

By stating (3-8), Gwangsu supports his claim that the group should also raise funds to help fellow members as well as to assist the church. After relating his personal experience, Gwangsu makes clear his point in (10) that what is important is members' perception of what a fundraiser is.

### 2.2.5. USING SILENCE

Using silence is another conflict management strategy (Goodwin 1983, Pomerantz 1984a,b, Tannen 1985, 1990, Song 1993, 1994). When Korean speakers disagree or oppose their interlocutors, they tend to be quiet and not to express their positions openly, as demonstrated in Excerpt 5. The silence in the conversation below demonstrates the defensive value of silence (Tannen 1985, 1990); speakers can avoid losing face by not uttering negative or confrontational statements. Concerning the church activities and the performance of the group presidential officers, Hyunjin points out that there has been a lack of communication between officers and group members. Positively accepting Hyunjin's point, Gwangsu urges the participants to make suggestions openly. But other participants are rather quiet.

[Excerpt 6 ]
(1) Hyunjin: *Kulentey, ice-kkacinun -->*
but now till
'But, up to now -->'

(2) *Sanguy -ka manhi eps-ess-tunkes kath-eyo.*
discussion Nom. many not PAST may seem SFM
'it seems that there is not enough discussion.'

(3) *Kulayse*
so
'so,'

(4) Mr. Lee: *cohun* idea *ppalli naynoe -si -eyo.*
good immediately give out H'Inf. SFM
'Please give out a good idea right now.'
'Please let's have a good idea right now.'

(5) *i cenyek i tape ppalli thele-yaha-nikka*
this night this soon play must because
'because we will play this video tape soon.'

(6) Gwangsu: *PPALI nay -nwa!*
soon give out must
'Give one out RIGHT NOW!'
'Let's have one RIGHT NOW!'
[laughing]
[silence: 8 seconds]
[no response from participants]

(7) *PPALI uykyen nay- nwa!*
immediately opinion give out must
'Give an opinion out RIGHT NOW!'
'Let's have one RIGHT NOW!'
[laughing]
[silence: 6 seconds]
[no response from participants]

(8) Eunsun: *kuliko ikes-un hanauu idea-tey*
and this Nom. one is
'Well, this is just an idea.'

(9) *hoycang-tan-hoa* communication-*i antonkes-kath-eyo.*
president team with Nom. not do seem SFM
'It seems that communication with the president's
officers has been poor.'

Following Hyunjin's comment, Minister Lee urges the group to make some suggestions in (4-5). His repetitious use of *ppali* 'right now, immediately' encourages Gwangsu to ask members to speak out. Since the situation is so quiet, Gwangsu even makes a playful request for members to speak out in the syntactic form of an imperative in (6). However, the members choose to be quiet. After noticing the silence, Gwangsu laughs and repeats himself in (7). Despite his playful request, the members do not voice their opinions. After the silent moments, a female participant, Eunsun, initiates discussion to voice her view in a hesitant tone, by the use of the noncommittal sentence-final marker *katheyo* 'seem.'

## 5. CONCLUSION

This study has investigated how Korean speakers negotiate disagreement and manage conflict. It suggests a continuity of argument from the most mitigated to the most aggravated, and it suggests two types of argument strategies: multifunctional strategies including the use of repetition, questions, interruption, oppositional discourse markers, etc.; and nonconfrontational strategies including disagreeing playfully, constructing dialogues, reporting opinions, telling personal experiences, and using silence. In verbal conflict interactions, considering social factors such as interlocutors' age, gender, social status, the matter under discussion, interactional goals, etc., Korean speakers attempt not only to maintain the overwhelming social value on politeness by expressing their opposition in an indirect manner, but also to voice their own opinions by verbalizing them in a direct manner.

## NOTES

1. I would like to express my appreciation to Dr. Deborah Tannen (mentor), Dr. Deborah Schiffrin, and Dr. Heidi Hamilton for their guidance and comments on my Ph.D dissertation, from which this paper derives.

2. See Song 1993 for a detailed discussion of the participants and conversations.

3. Transcription conventions follow Tannen (1984) and the list of abbreviations are as follows.
H'I = humble form of first person pronoun
H'Inf. = honorific verb infix; Obj. = objective marker
Nom. = nominative case marker; PAST = past tense verb infix
Poss. = possessive case marker; SFM = sentence-final marker
Q'SFM = interrogative sentence-final marker.

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# VII

# GRAPHEMICS

# THE ALPHABETIC REBUS

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I. In 1855 a renowned philologist, Karl Lepsius, proposed a new set of representational symbols (which he called a *Standard Alphabet*), in order to effect a better method for the use of alphabetic letters around the world. It was well received however Whitney, the American Sanskritist, was critical of the fact that no attention had been paid to the relation of the vowels and consonants as they generally function together in the alphabet, as a whole. Whitney thought it would not be difficult to establish a simple principle for their phonetic operations, and yet more than a hundred years later difficulties still cloud the entire issue. Consider a recent statement by Gleitman and Rozin, 1977:20, 'The alphabetic principle embodies a strong claim about language organization: that perceived speech consists of temporally linear sequences of minimal segments of sound, smaller than a syllable ... [yet] there is no simple discrete analogue of these units of spelling in the acoustic wave ... ' Now if such serious problems still abound in the alphabet after so many years, then perhaps it is necessary to return to its origin for an explication--which is just what this paper shall attempt to do!

For surely it is desirable to obtain a better understanding of this important instrument. Diringer reminds us that (1968:I, 164) ' ... Brahmi, the great mother-script of India, the Korean alphabet, the Mongolian scripts, are derived from the same source as the Greek, the Latin, the Runic, the Hebrew, the Arabic, the Russian alphabets ... ' Most experts would concur with his dictum, for it is believed that the early alphabetic systems all evolved from an original Semitic prototype, though such an innovative artifact has never been recovered. Nevertheless there are valid clues which point to the Semitic origin, in fact too many to be mentioned here. Suffice it to note that Diringer (1968:I,161) also observed: 'The prototype alphabet, which we have [earlier] referred to as "Proto-Semitic," probably originated ... in the Hyksos period, now commonly dated 1730-1580 B.C.'; and it seems that the Hyksos were Semitic nomads who once ruled briefly in Lower Egypt.

Prior to the invention of the alphabet the scribes of antiquity were obliged to record each of their phoneticized sounds as syllabic graphemes or syllabic integers rather than as discrete letters, which of course did not exist. In the process of recording all their sounds as syllables they must have immediately noticed that the vowels form homologous syllables or monophthongs, which accordingly were written as separate characters or at least in separate groupings. By contrast, consonants would prove to have been dualistic for in careful audition a second auxiliary signal is always apprehended in connection with every isolated consonant--its inevitable vowel-shadow, so to speak--and this percept agrees well with Stetson's dictum that (1951:2) 'The consonant functions only in a syllable ... ' and also with another remark (Stetson 1945:89-90) ' ... the vowel is essential for the chest pulse of the syllable.' Such statements provided ample evidence why vowels could be written independently and consonants could not, yet the same ideas were also expressed by classical grammarians. The maxims of Dionysius Thrax are often mentioned, for example Allen (1973:33) has cited Thrax's relevant statement: 'They are called "consonants" because by themselves they have no speech sound ..., but combined with the vowels they produce sound.' Allen also cited a phonological point from the Ṛg-Veda, ibid, 'A vowel with a consonant, or even by itself, forms a syllable ... ' These truisms find affirmation in the fact that consonants are never written alone or nonsyllabically in Indo-Europen languages, and the same might also be said of the Semitic where the definite article and most prepositions, although formed from single consonants, are never allowed to stand alone.

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[1] The author wishes to thank Dr. Lloyd Bowling of the Speech and Hearing Department and Dr. John Ziolkowski of the Classics Department, both of the George Washington University, for their invaluable assistance during the preparation of this paper.

In remote antiquity, however, each and every consonant was regularly displayed as an individual syllable (--which might perhaps be called a duophthong?) and so the syllabic orthographies were very awkward and difficult to read. Possibly the best way to understand their shortcomings is to monitor how the speech sounds operate in physical environments whenever they become separated, as they always do when children recite the alphabet. Then they indeed become syllabic and a phonetized or syllabic alphabet shall be presented shortly. But first it is important to emphasize the fact that the presence of the environment itself always exerts a strong influence on all kinds of sonic communication, for without some form of environmental presence, such as air or water, they could not even exist. Thus it seems obvious that related physical constraints might affect the morphologies of all phonations and such a constraint apparently does affect the consonants, which can never be pronounced aloud nor carried out into the atmosphere without the help of their complementary adjoining vowel-shadows. Moreover it can hardly be a coincidence that the nomenclature for the vowel sounds, i.e. the word *vowel* itself, and also *vocal*, derives from the same root as words which also signify basic acts of speaking, e.g. *voicing* and *vocalization*. They all can be traced back to Latin *vōcāl(is)* and also *vox*; cf. Sanskrit *vac-* 'word, speech'. The unique capacity of the vowels to serve as aerobic conductors to the consonants evidently stems from the fact that they emanate from the lungs, which are the sublaryngeal organs of respiration.

In contrast to vowels, the sharply-honed consonants are produced in varying areas of the supralaryngeal vocal tract, which factor allows them to generate the distinctive phonemes that doubtless can be fully apprehended by human ears alone. Such are converted into words which serve as agents of communication in indigenous human societies, and although verbal communication differs in every society there is yet an overall community of utterance. As Jakobson (1972:77) noted, 'The list of distinctive features that exist in the languages of the world is supremely restricted ... ' Stetson (1945:84) also observed something similar, ' ... the physiological possibilities of the articulatory apparatus ... have narrowed the phonetic signals ... to a group of 30-50; and this has been made the basis for the "alphabetic" systems of writing ... '; so also Miller (1981:52-3). Nevertheless these same distinctive features can also be apprehended syllabically whenever speech sounds become isolated; and since phonetic writing rides on the backs of the sounds which it seeks to record, such distinctive sounds were at first recorded as holistic syllables. But in actual speech these features no longer occur as isolated syllables; they merge together spontaneously forming rapid aerobic vibrations and, since all sounds move through space-time continuums, they must be apprehended as four-dimensional objects in motion. As such they are subject to different physical laws than objects that remain at rest, which all orthographic data eventually become.

Traditionally and still today, the fundamental method for converting speech sounds into writing relates to their separation into the smallest possible segments so that they can be shown in separate alignments on two-dimensional writing-planes. Currently there are two ways to do this: through their separation into conventional syllables, as still occurs in a few modern syllabaries; or, as is more usual, through their separation into conventional phonemes or alphabetic letters. But prior to the alphabet there was only one option. Since both vowels and consonants formed natural aerobic syllables, all of them were so analyzed and then recorded, as reconstructed optical syllables. As already mentioned, a contemporary parallel to such writing could be viewed in a cursory glimpse of the modern alphabet as it occurs in its original speech mode and such a version is attempted in figure 1.

The phonetic interpretations of fig. 1 would link the familiar graphemes of our romanized alphabet to the audible sounds of oral recitation which they try to represent. Such are intended to confirm the point which is being made, that isolated vowels are structured as simple homologous syllables, whereas consonants are innately dualistic, since each exhibits two differentiated signals. Of course vowels such as diphthongs also convey more than one sound, but theirs continue to remain within the same vocalic category. For such reasons it may now be clear why the Ancients could not transmit their speech sounds realistically, and yet they did succeed in suppressing the

A [eɪ] B [bi] C [si] D [di] E [i]
F [ɛf] G [dʒi] H [eɪtʃ] I [aɪ] J [dʒeɪ]
K [keɪ] L [ɛl] M [ɛm] N [ɛn] O [oʊ]
P [pi] Q [kju] R [ɑr] S [ɛs] T [ti]
U [ju] V [vi] W (2 x U) [uʊ] X [ɛks]
Y [uʊaɪ] Z [zi]

Figure 1. A phoneticized alphabet

aerobic volumes which normally cling to all aural manifestations. The scribes accomplished that feat by adopting naturally mimetic techniques of writing, wherein oral verbalizations were converted into artificial graphemes and registered on two-dimensional planes. But since their images referred to holistic syllables instead of discrete phonemes they were not very effective.

Thus the very fact that the same oral/aural sounds were somehow transformed into alphabetic letters, which are obviously realistic although hardly four-dimensional, itself suggests that some alteration of the original sounds must have occurred--at least in the writing. Surely some anomaly exists therein; Gleitman and Rozin rightly observed that (1977:20) 'The consonantal segments of syllables are hard to analyze out of the syllabic context in which they (must) always be embedded ... ', and yet it is just because such segments are regularly indicated as analytic letters, instead of holistic syllables, that they can readily combine into the heterogeneous syllables which indeed, are the hallmark of both speech and alphabetic writing!

Accordingly the next section of this paper shall undertake a rather detailed investigation of the historical processes and events which led to the acquisition of our modern alphabetic system, and yet perhaps a little anecdote of more recent vintage could provide a helpful preliminary clue. A nice story is told about John Dalton, the nineteenth-century Englishman whose early environmental studies ushered in the modern age of scientific atomic theory. Dalton was described by the late Jacob Bronowski (1973:153) as a somewhat colorless individual who ' ... walked out of Manchester every day; he measured the rainfall, the temperature -- a singularly monotonous enterprise ... ' Bronowski would write, in such a formidable climate. Yet Dalton's persistent interest in the natural chemicals of the English countryside--its marsh gases, water and carbon dioxide--led him to reaffirm the ancient Greek theory which proposed that all matter is composed from atoms or elementary particles, as Dalton called them (Bronowski, 1973:151), ' ... which can never be *metamorphosed* one into another.' An old-fashioned portrait of John Dalton appears on the opposite page of this little story and its caption bears the outdated maxim, 'Thou knowest no man can split the atom.'

Some analogy might exist between that brief episode and the situation which once prevailed in the field of writing, since the length of time when syllabaries were the only orthography extant suggests that the Ancients also had a similar problem respecting their speech sounds, and it requires the alteration of only one word in the aphorism above to understand what it was: thou knowest no man can split the syllable. Yet with the kind intervention of Nature, some ancestor(s) apparently did.

II. Perhaps the best way to undertake any alphabetic inquiry would be to start at the beginning when writing itself began, and yet even before those preliminary steps were taken another development had to occur, man's all-important acquisition of speech. Once that megalithic step was accomplished new ideas could quickly circulate among primitive talkers and thinkers, the best of which were doubtless retained in oral traditions. Presumedly we then discovered art and with that glorious, but secondary innovation our ancestors also acquired a way to store their speech sounds indefinitely. Incipient artists learned how to project the ideas of group conversations on the walls of caves and mountain surfaces and communal dialogues became permanently enshrined in memorable petroglyphs. Much later another giant step was taken; the generous proportions of the early petrolyphs were reduced to sizes that conformed with the needs of narrative sequence, and then the moon engulfing the sun was portrayed in realistic stages that creatively rivaled the real events. Such depictions of natural objects in space have been called pictographs and the same were eventually followed by more sophisticated ideographs; however both pictographs and ideographs are usually believed to be below the phonetic stage of writing. Thus the next phase of *Homo scriptor* concerned itself with a mixture of acoustic and optical principles known as phonetization, a graphic technique which seeks to reproduce the quicksilver phonologies of human speech.

Phonetization contributed significantly to lowering the number of signs needed in writing, since its introduction also implied the eventual use of a script based entirely on man's verbal capacities. This meant that writing could finally be removed from its earlier pictorial mode which was a relatively disorganized, ad hoc approach. For obviously the mass of data which could be recorded by pictures was limited only by what the scribes could see or imagine, and accordingly the number of graphic symbols used in picture-writing might be endless. One need only recall the Chinese calligraphy, and its thousands of characters, to affirm the logic of this statement. Yet the ingenious use of phonetization seems to have started almost as soon as the invention of writing itself, and many authorities attribute its swift appearance to the discovery of the rebus, a graphic device which was extremely useful in rendering

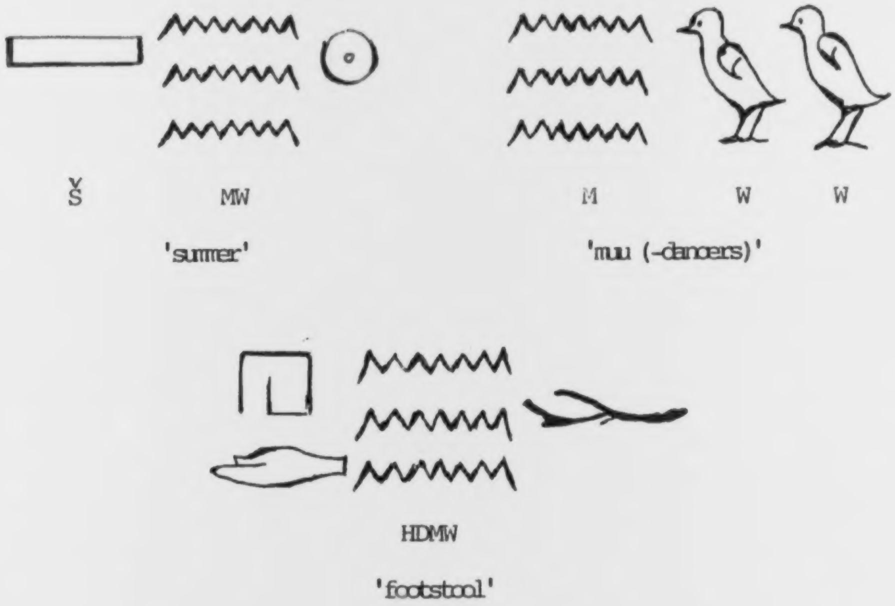
Š
MW
'summer'
M
W
W
'muu (-dancers)'
HDMW
'footstool'

Figure 2

Egyptian hieroglyphs, c.2200 BC. After Gardiner, 1957:490.

difficult names and words.

The principle of the graphic rebus involves the transfer of a visual image from its original verbal referent--the word it first depicted--to a different verbal referent, just because it happens to sound the same. For instance, among hundreds of Egyptian hieroglyphs there was one which signified the word for water, *mw*. Usually shown as a group of rippling waves, its pronunciation was probably close to [mau]; cf. Coptic *mow* or Hebraic *mayim* (the final syllable of which only represents pluralization); both of them indicate water. But the Egyptian watery hieroglyph was also used in the spelling of another word which had a different application, i.e. their word for summer, *šmw*. A graphic illustration of this second glyph, modeled after Gardiner (1957:490), is shown in figure 2, along with two other similar usages.

The symbol for summer was depicted in three visually discrete images, comprised of two phonetic units plus a silent determinative. The first visual image replicates a stylized version of an older pictograph which once clearly depicted the Egyptian word *ses* 'bar, bolt' as such; however, in the course of time the pictographic version was modified to that of a flattened rectangle, which is of course still considered to be a pictograph. In addition to its graphic reduction, the earlier glyph was also reduced phonetically through natural modifications that sometimes occur in conditioned orthographic environments, a process which might be loosely associated with vocalic elision or attrition (see Jensen 1969:61). After continuing phonetic modifications, the original sound of the logograph for *ses* was finally reduced to a single-consonant syllable: *s* plus some undetermined vowel; thus, although it had first realistically referred to an actual bar or bolt, the syllabic sound of /s/ could now contribute to the spelling of an entirely different word. This phonetic application of a pictograph to a word or syllable other than the one with which it originated is called a rebus.

The second discrete image in *šmw* also occurs as a rebus, since its prior verbal reference no longer applies. Now the picture of the Egyptian word for water refers to a syllable, the sound of which contributes toward the spelling of another word. Thus both pictographs had now acquired the rebus-like ability to convey two sensory signals, one aural and the other visual, simultaneously. By contrast the third symbol functions, at least in this instance, entirely within the visual mode, hence it serves as a silent determinative. It merely suggests, through psychological association, the semantic values of the other two signs. Here the message it sends seems to recall the hot suns of some remote Egyptian summer.

But this discussion of the hieroglyphs is probably premature, inasmuch as most authorities believe that man's first attempt to write really began in Mesopotamia, where the pictorial script of an obscure people, the Sumerians, dates back to about 3300 BC. The oldest-known writings consist of small images carved upon stone monuments (of course wood and bone may also have been used). Since such hard surfaces were undoubtedly difficult to penetrate, all unnecessary details were quickly eliminated; for example, round curves swiftly became straight lines. According to Jensen (1969:83) it is possible that a few phoneticized syllable-signs were already present (ibid) ' ... in the oldest written monuments preserved to us ... '

It also seems that at about the same time that phonetization appeared many of the picture-signs began to disappear. This is usually attributed to the difficulties associated with their execution; however, the introduction of phonetization itself may also have played a large part. Its intrinsic value as a new orthographic approach, wherein the data to be recorded were more controlled and reduced in number, probably did not go unnoticed. Thus the phonetic factor, together with mechanical difficulties associated with the pictures themselves, eventually led to the demise of the primary pictorial mode.

At the point when all of the pictures were lost the vowels and consonants (instances of which, although mutually exclusive, had often appeared together in single ideographs that represented whole words) became permanently isolated, because they could be holistically expressed in their own abstract signs. Later, when soft mud tablets were introduced, the reed styluses used by the scribes in writing left deep grooves at the start of each new impression, which created a uniform optical effect that caused such scripts to become known later as cuneiform (after Latin *cuneus* 'wedge'). Similar symbols eventually evolved into the classical Akkadian orthography, a scriptural lingua franca that was used for another thousand years by many different peoples throughout the ancient Mediterranean.

Thus history indicates that the Mesopotamian scripts were never used exclusively by any one single nation or people. Indeed, it seems that the indigenous Sumerians were ousted at a very early date by foreigners, the Semitic-speaking Akkadians. Undoubtedly quite intelligent, they adopted the Sumerian invention of writing, turning it to their own use; however unforeseen problems developed. The Semites could not render their consonantal sounds effectively since they had to be shown in holistic syllables, a difficulty that did not affect Sumerian writing, where all of the word-forming consonants were positioned naturally next to vowel-forming syllables (in other words their consonants did not cluster into uninterrupted consonantal strings). Unfortunately the same was not true of the Akkadian orthography and as a result their scripts exhibited endless series of minisyllables, because their consonants were routinely rendered as duophthongs. The end-result was that such writing became as difficult to read as a modern-day group of scientists recently supposed any language would become if ever its (Liberman et al. 1967:447) ' ... phoneme strings could not be recovered.' This is evidently what happened in the Babylonian scripts and also in the later Assyrian, where the consonantal phonemes were regularly interpreted as isolated syllables.

Yet it is difficult for a relatively untrained person, such as myself, to find valid instances of this anomaly in the ancient orthographies, especially since the proper separation of any language into its conventional syllables often tends to be arbitrary! Nevertheless King, a late nineteenth-century paleographer, has recorded a few examples which seem to demonstrate the separation of several consonantal clusters, e.g. /str-/, /-ng/, and /dr-/, into analyzed duophthongs, or syllables. These were respectively written in the Assyrian as (L.W. King 1898:XXXIX-XLI) '*As-ta-ar-ta-ni-ik-ku* for Stratonice, a proper feminine noun; *ku-un-gu* for the *kungu*-plant; and *ud-ra-a-ti*, the Assyrian word for dromedaries. Such orthographic paradigms illustrate that, as Jensen once remarked, 1969:95, 'The preliminary condition for the employment of a sign for consonant + vowel as alphabetical sign for the consonant alone was to that extent lacking ... ' in the Mesopotamian scripts and perhaps Driver also meant the same thing when he stated categorically that (as quoted by Diringer, 1968:I,166) ' ... syllabic writing is a blind alley from which there is no escape.'

To summarize the previous pages then, one might say that while the invention of art and graphic visualizations properly belong to all mankind, the Mesopotamians seem to have been the first people who ever used writing. The Sumerians in particular appear to have originated the practice of using pictures to commemorate important ideas and events but, since the scope of ideas and images can never be restricted, their primitive pictorial inventories could have risen to astromical proportions; so it was a great improvement when man learned how to record his memories by using graphic symbols that related to the sounds of his voice instead. Moreover, since human utterances could never materialized into solid shapes and forms, they could also be depicted in relatively simple abstract lines. Eventually ease of execution and speed of production assumed priority over all earlier aesthetic considerations, yet with the unfortunate result that each new scribal apprentice was obliged to learn all of the abstract symbols of his trade entirely by rote.

In the meantime, in Egypt, the course of writing was proceeding along very different lines. If it were true--as modern scholarship claims--that the Egyptians didn't invent writing, then perhaps their scribes felt that they could at least excel in having the most elegant signs. For and unlike Mesopotamia, Egypt had a plentiful supply of art materials, especially in the papyrus plant, which provided good surfaces for absorbing the moist inks and colored dyes of the painter's palette; besides they were naturally gifted artists! Thus there was always a strong inclination to maintain the use of pictures in the Egyptian orthography and they were indeed well preserved, in the hieroglyphs, as religious records for about three thousand years, or until c.200 AD. That gave the scribes ample time to become adept at their profession and once a hieroglyph was established it was meticulously maintained, according to its own precise configurations.

Now it seems that the pictorial delineation of any object is always, consciously or unconsciously, coupled with the verbal reference that is already established in its name. For as Miller (1951:181) noted, 'A response established to the name of an object generalizes to the object itself, and vice versa ... ' Perhaps that was why a device known as the rebus (which originated simply as an optical pun or play on words) quickly gained momentum in the Egyptian orthography. Miller (1951:207) also noted that 'Strong verbal associations ... lower perceptual thresholds and shorten the time needed for discrimination.' Thus the Egyptian language, with its highly stable vocabulary, would have served as an excellent source for the promotion of immediate visual/verbal responses. In any case, about twenty-four of the single-consonant, or open-ended, syllables began to function in the manner of highly specialized orthographic rebuses and very strong mnemonic links were established between them and their verbal referents. Miller (1951:212) also observed that 'Whenever intraverbal connections are available, it is as if some of the learning had alredy occurred before ... ' and it seems that in the matter of the hieroglyphic rebuses, the heuristic feat which must have been achieved before was nothing less than the collective awareness of the primary speech sounds themselves, the basic phonemic signals that were apparently put together when man first learned how to speak.

In the course of time psychological associations relating to such special rebuses caused them to become permanently linked with the discrete consonantal phonemes that they so often seemed to represent, despite the fact that each of these hieroglyphs was also assumed to contain its necessary vocalic element, or vowel-shadow, locked up within the confines of its own image. Of course such an illusion could not have arisen in the Mesopotamian scripts, where the syllabicized vowels and consonants were kept apart.

Isaac Taylor, a nineteenth-century philologist, correctly identified certain orthographic phases which needed to transpire before these special hieroglyphs could fully develop. Taylor's account is worth reviewing here, despite the fact that he prematurely judged such glyphs to be alphabetic, a term that really should be restricted to the unique integers of the original alphabetic canon, itself. Nevertheless Taylor (1883:I,63-4) rightly assumed that 'The alphabetic characters must have slowly grown out of syllabic signs and these in turn must have been developed out of vergal phonograms. The verbal phonograms ... from ideograms, which again could only have originated in mere picture writing.' Taylor continued with a brief account of how one hieroglyphic symbol evolved from its syllabic predecessor to become a holistic sign for the sound of /s/, and such is again presented en bloc in figure 3 (with the caveat that the images shown therein are greatly stylized). Taylor concluded by observing that, ibid, 'It may be regarded as probable that it was in some such manner that the difficult concept of a consonant grew up, slowly and almost unconsciously.'

Surely most readers would agree that Taylor's account represents an intelligent description of how one hieroglyph could become a consonantal forerunner; his language is straight-forward,

... the alphabetic symbol 𓊃 *s* was originally the picture of a "bolt," *ses*, and its primitive syllabic value must have been *se*. In conjunction with \\ *i* the group 𓊃\\ is read *si*, the vowel sound of *e* being elided, so that the symbol 𓊃 has the power of a pure consonant.

Figure 3. Evolution of the hieroglyphic symbol for /s/

In a corresponding manner the sign for 'snake' 𓆓 (*ḏ-t*, in which *t* is merely the feminine ending) became the phonetic sign for *ḏ*, the picture-sign for 'bread' 𓏏 (*t-*) became the phonetic sign for *t*, the picture-sign for 'mouth' 𓂋 (*r-ꜣ*, cp. Coptic *ro*) the phonetic sign for *r*, the picture-sign for 'hand' 𓂧 (*d-t*, ... ) the phonetic sign for *d*, the picture-sign for 'sea' 𓈙 (*š-*) the phonetic sign for *š*, the picture-sign for 'rising ground' 𓈎 (*ḳ-*) the phonetic sign for *ḳ*, etc.

Figure 4. Other special rebuses for consonantal sounds

simple and without any added technicalities such as the inclusion of terms like *weak consonants* or *prosthetic vowels*, which are so often used to lend credence to the theory that no true vowel signs ever appeared in the Egyptian orthography. Evidently Taylor was too unimaginative to embrace all that; he preferred to call a spade a spade or more properly, a vowel a vowel! By contrast the current writer is obliged to confront a very old, although as Diringer (1968:I,165) remarked, still unexplained, tradition which pertains to the orthographies of Egypt and the later Semitic scripts, a quite unsubstantiated doctrine which precludes the use of vowel letters anywhere in their writings. Indeed only consonantal graphemes are deemed to be present!

Unfortunately the ideas which have evolved during the course of the present study must suggest otherwise, in fact they are impossible to reconcile with a no-vowels viewpoint. Nevertheless, instead of quickly positing a hurried and unqualified negation an alternate option shall be pursued; all arguments shall be deferred until an opposing statement can be more adequately expressed, at an appropriate time. In the interim it is hoped that an acceptable substitute for the word *vowel(s)*, i.e. the term *syllabic* (Bloomfield 1933:120), may be adopted henceforth without causing any problem.

Returning to the prior subject, one might question Taylor's assumption that the syllable *ses* had a primitive value of *se*, since the original form represented the whole word; indeed the process by which these syllables emerged is not entirely clear. In the case of *ses*, perhaps the final /s/ was eventually construed as a redundant duplication of the first sound, and therefore eleminated. Taylor's description of this syllable is matched by an account given by Jensen; however, Jensen's version labors under difficulties associated with the Semitic consonantal theory.

Most of the syllabics in Jensen's discussion are identified with Hebraic *ʾaleph*, often described as the hard vocalic attack. Also the semivowel /w/ is cited by Jensen as being one of a limited group of (roughly similar?) consonants which might follow an initial consonantal integer and then be elided, thus allowing the first consonantal integer to fuction alone, or acrophonically (curiously enough, the limited group which Jensen mentions consists mainly of phonetizations that are considered to be semivocalic in IE languages). A partial description of how the picture of a bar or bolt became the phonetic sign for /s/ was given by Jensen (1969:61), as follows, ' ... the sign for it —//— was now used to represent any and every syllable *s* + a vowel, or, since the vowel did not come into consideration, just as alphabetical sign for *s* (hence even if followed by a consonant).'

No doubt such phrasing is a little confusing; nevertheless it seems that whenever a dualistic glyph such as *se* happened to be placed next to a more elemental glyph which expressed a syllabic sound, such as *i* \\ --but Gardiner would perhaps interpret it as *y* --a redundancy of syllabic elements always ensued and then the second sign inevitably overcame the internal syllabic element or vowel-shadow that lay hidden within the consonantal facade of the first glyph. As a result the initial consonantal integer remaining in the first glyph became acrophonic and when it did it no longer represented a holistic syllable, which is why such signs were often assumed to be alphabetical in nature. Jensen alone seems to have realized that they were (ibid) ' ... more properly called single-consonant phonetic signs ... ' and he provided a logical reason for why that should be so (Jensen 1969:62, n.5), 'A single-consonant syllable-sign can indeed only reproduce a syllable of the form vowel-consonant or consonant-vowel; now if the vowel remains unexpressed, the syllable is in its very nature destroyed, and the "syllable-sign" is precisely no longer a sign for a syllable.' Further details given by Jensen (1969: 61-2) are illustrated in figure 4.

In an attempt to compare the orthographies of Egypt and Mesopotamia Jensen (1969:55-56) noted that ' ... both have basic signs; both know phoneticization; both contain determinatives; and both possess syllable-signs ... that have arisen from word-signs.' He then proceeded to list some of their disparities, ibid, 'In the Sumerian, it is true, the further development to letters of the Egyptian ... is lacking; and there is also no resemblance ... in the sign-forms.' The last part of this statement is a little ambiguous since it fails to identify just what the sign-forms do not resemble, but in all probability Jensen was referring to the complete absence of pictorial elements left in the Mesopotamian scripts, as contrasted with that of Egypt. Taylor also compared the orthography of the Egyptians to those of other scripts. In an astute remark he noted that (Taylor 1883:I,62-3) ' ... neither the Babylonians, the Assyrians, the Medes, or the Japanese succeeded in passing beyond the stage of syllabism. Symbols for the vowels are found in the syllabaries of these nations, but the more difficult conception of a consonant was not attained or even approached.'

III. So it finally becomes clear why the consonantal idea emerged only in the hieroglyphs. All other orthographies were virtually devoid of pictures and it seems that the Egyptian practice of continually registering the same consonantal images in almost exactly the same way--always keeping the pictures in conjunction with their viable verbal referents--gradually allowed such consonantal syllables to become so firmly associated with the graphic images that housed them that their redundant vowel-shadows were eventually lost. In this way Egypt gradually approached the difficult conception of the phonemical consonants.

Now the simple factor of longevity turns out to have been a crucial point. This is discerned in Jensen's (1969:62) remark, 'That the alphabetical signs evolved only gradually can be seen in the fact that in the earliest period no sign for *h* was present as yet, and the owl-sign to begin with did not yet denote merely the sound of *m* ... (? --there is one example, at least, where ... [a visualized owl] really does mean owl still ... ' Thus Egypt had preserved all of its dualistic consonantal phonemes as syllables that were expressed in single holistic images and when the redundant elements of such images were lost, through attrition, only discrete consonantal phonemes remained (in other words they were split in half). Yet for the incipient alphabet two things were essential, not just one. The formal presence of the pictographs was extremely important, but not any more so than the continuing stability of their matching verbal referents. It was the union of these two separate sensory media over long periods of time that produced such elegant fruit. As Gombrich (1972:86-7) remarked, 'The use of two independent channels ... guarantees the ease of reconstruction. This is the basis of the ancient "art of memory" ... '

Thus the Egyptians acquired a mnemonic tool, the orthographic rebus, which suggested dimensions of meaning other than those contained within its own explicit design. For example, a rebus could project the aural signal of any isolated consonant in such a way that does not actually occur any place in nature but one, which is the human brain. And with the help of some very special alphabetic rebuses the psychological consonants of the human mind were eventually turned into writing. The unique capabilities of the orthographic rebus allowed the consonantal components of human speech, which are produced physiologically as vowel-augmented syllables, to be shown in writing as single integers each. The discovery of this technical principle, which was ultimately incorporated into the *Proto-Semitic Alephbeth*, meant that the entire inventory of man's basic phonations--its dualistic consonants as well as the cardinal vowels--could be rendered as single signs in writing.

The acrophonic hieroglyphs were undoubtedly reorganized by some great unknown scribe(s) into the literal prototype that has become our modern written alphabet. Its inventor(s) seems(s) to have realized that the inventory of sounds used in speaking amounted to no more than thirty, or so, discrete phonemes. Such a small group could easily be fitted out with its own special integers and the same would not be difficult to memorize. Moreover, there would have been no reason to exclude the vowels, which really should have become more important than ever, since they were the only true syllabics left (an important point which shall be discussed later). So possibly some of the original integers may occasionally have represented syllabic sounds--for instance, those graphemes which are sometimes written as *alif* 'a' (whose verbal referent is still an ox); *he* 'e', (doubtless referring to an exclamation); *waw* 'u', meaning a hook; *yod* 'i', a hand, and *ayin* 'o', the open eye. In any event, the original alphabetic code was somehow assembled and the rest (as they say) was history. In an important article F. M. Cross (1954:134,15-25) developed a paleographic record for eleven of the alphabetic signs: *a*, *b*, *e*, *h*, *k*, *l*, *m*, *n*, *o*, *s*, and *t*, and more have been verified since.

After that great innovation both the vowels and consonants (which convey an illusion of quantitative equality, even though they are structurally different) were able to come together independently, as individual letters. According to the present hypothesis all of the consonantal sounds in the alphabetic system appear to be abstract phonemes, due to which artifice they can be shown in equal, or at least roughly symmetrical, distribution with the vowels, which are expressed more realisically in naturally imitative symbols.

In a final summary of alphabetic writing it is necessary to distinguish three major phases of development. The first stage began when the Sumerians realized the necessity of finding some tool or agency, in addition to that of their own brains, for maintaining records of the multiple events that were steadily increasing in their environment. The tool which was eventually adopted was the preservation of information in visual symbols, yet it was not long before their pictorial inventories reached unmanageable proportions. However Jensen (1969:84) also remarked that within a few centuries those inventories had been reduced significantly, which argues strongly for the advent of phonetization.

The introduction of phonetization was the second major step. Graphic visualizations of the speech sounds allowed the Sumerians to reduce the number of their signs without creating any additional problems. The inherent simplicity of the Sumerian language allowed them to show the majority of their sounds in coherent syllabic segments, somewhat similar to (yet perhaps not identical with) those kinds which are still used today in modern syllabaries. But later, when the Semitic-speaking Akkadians arrived, the simple phonological interpretations that had worked well for the Sumerians no longer were applicable.

Apparently the reason was that, in the Semitic, the dualistic consonants frequently came into contact with each other, and each needed to be shown as an isolated syllable. They could not be registered in writing in the same way that they occurred in speech. This factor resulted in the introduction and use of the ineffectual Semitic syllabaries, which have therefore acquired a dubious distinction of being among the first to reveal the natural duality of the consonantal phonemes (but of course the same duality also affected the Egyptian Hieroglyphs). Nevertheless, it was this orthographic challenge which motivated, and eventually produced, the final chapter in the saga of how man learned to write.

We learned how to write well by learning how to write alphabetically and a cultural innovation similar to that of the Alphabet, but hardly so profound in character, would not occur again until c.1500 AD, when the invention of painting in linear perspective swept the Renaissance world. For just as the alphabet, in its day, was a new way of representing the speech sounds realistically, so the deployment of abstract scientific principles in the realm of art lent innovative depth and realism to the artist's canvas. Both of these inventions required like solutions to similar problems, since both were rooted in a common need; they were obliged to adapt certain multidimensional aspects of the real world sufficiently well to be comprehended in man's abstract world of learning and art. Yet our abstract comprehensions have always been hampered by one central difficulty (at least they were until the advent of the computer!), for our observations of the real world must usually be projected onto flat, two-dimensional planes. But that difficulty was finally overcome in respect to speech with the invention of alphabetic writing, just as it would be overcome later in art, with the introduction of perspective in painting.

Sapir (1964:11) once observed that, ' ... true progress in the art of writing lay in the virtual abandonment of the principle with which it originally started.' Of course this could be said of the advantages that were gained when pictures were exchanged for phonetization, for then the symbols of writing were more controlled and effectively reduced. Paradoxically enough, however, the only way that the final orthographic problem, the duality of the consonants, was effectively resolved was by a virtual return to the original symbols with which writing had begun; for by then some of them had become powerful acrophonic rebuses, the stuff from which alphabetic letters might be made. Such letters could combine together in writing as spontaneously as do the equivalent utterances of human speech--which actually rarely ever occurs in isolated segments! So as it turns out, synthesis proved to be a more advanced process than analysis; once again Nature revealed that the sum of its parts was greater than the existence of its separate entities.

All of which brings us to a final problem; according to prestigious and longstanding traditions, there were no vowel letters in the prototype alphabet. Yet this idea, as previously acknowledged, is difficult to reconcile with some of the percepts expressed herein. Indeed, one can only surmise that if the vowels were not literally expressed, then at least their presence must have been clearly felt and so interpreted! For there is some fundamental balance in the way that the vowels and consonants function together in generating speech, a basic dynamic which seems to occur in both alphabetic writing and in nature, itself; and when considered in the light of this criterion, the orthodox idea that the Greeks were the first to have a true alphabet--true in the sense that it contained vowels--seems to be not entirely illogical.

Nevertheless it also seems that the same dynamic relationship occurs in the Semitic! Every consonantal letter therein is in a sense phonetically deformed, just as consonants are in the Indo-European scripts; for whenever one of them is separated from its neighbors it no longer represents a viable sound--no wonder philologists have called some of them mutes! But in the Semitic scripts, words can even begin and end with consonants that are shown with no vowels mediating between them, for instance, such Hebraic words as בן 'son'. Only two consonants are displayed therein, *b* and *n*, and yet a knowledgeable reader will automatically adjust his phonetic interpretation to include a third element, the syllabic that has been deliberately eliminated; in this instance it is surely the vocalic sound of [e] as in [ben]. Although unwritten, it is still readily available to anyone who knows the Hebrew language, either through the simple means of being identified as part of a very familiar word, or else by observing the word as a whole for supplemental vocalic indications, known as *vowel points*, which are usually included. For example, the previously cited word could also be rendered as בֵן. Thus it seems that a competent reader of Semitic orthography can always interpret its texts in some sort of an alphabetical manner, since vowels and consonants are somehow implied together therein and are capable of being acknowledged.

But doubtless more compelling than these subtleties is the high statistical probability that all the words in Semitic vocabularies cannot always begin or end with consonants--as they obviously did in the word given above. Instead, there will always be instances of words which commence and/or end with vowels and such vocalic sounds must be visually expressed in the writing. For instance, in the English nursery rhyme: Mary had a little lamb/ Its fleece was white as snow/, there will inevitably be some letters which express syllabic sounds that cannot be wholly associated with any consonants in their immediate vicinity. Thus in the lines just quoted such elements as the initial sounds of *its* and *as*; the terminal sounds in *Mary* and *snow*, as well as the indefinite article *a*, would all need to be shown as syllabics in writing. This simple illustration suggests that any orthography which suspends its vowels must also be an orthography which has no vowels in either initial or terminal positions, nor any which must stand alone; and it is highly unlikely that such a language exists anywhere in the world. According to Gardiner (1957:26), even the Egyptian words ' ... were made up of sounds partly consonantal and partly vocalic ... '

Recently a well known sports figure (who shall be identified fictitiously as Denny Rogers) pitched a perfect ball game and, theoretically at least, the Semitic orthography could not report such an event as it really occurred, for such would require headlines that read something like: DENNY ROGERS PITCHED A PERFECT GAME. But then of course two syllabics would be needed, one for the terminal sound in *Denny* and the other to express the indefinite article *a*. Therefore, consistent with the no-vowels thesis, such an item could only be reported in the Semitic as: DNNS RGRS PTCHS PRFCT GMS (--Dennis Rogers pitches perfect games).

For similar reasons the ancient Semitic orthographies also appear to resemble instances of modern shorthand, wherein the medial vowels are regularly deleted. A secretary taking notes in such writing quickly omits the internal vowels and yet she is able to reconstruct them correctly later, through a competent knowledge of their context. Of course a time will surely come when no consonantal symbol occurs in the vicinity of some lonely vowel, and then a specific grapheme must be supplied, in order to represent that sound in writing.

Semitic literature apparently contains many such instances in which individually written letters seem to express vocalic sounds, yet only one example can be given here, i.e. the Hebraic word תּוֹרה 'law', which is pronounced *Tôrāh*; perhaps readers may recall that it refers to the five books of Moses with which the Old Testament begins. In Hebrew it is written with four letters, תּ '*taw*', וֹ '*waw*', ר '*rēš*', and ה '*hē*' all of which are considered to be consonants. Yet to the Indo-European mind-set, anything sounding like the second and final letters of this word would surely be construed as a vowel, or vowels.

Other arguments could be raised against the Semitic consonantal thesis, yet time and space preclude that further option. Suffice it to note that eminent authorities have ambiguous ideas regarding this subject. For instance it was already mentioned that Gardiner (1957:26) acknowledged the presence of vowel elements in the Egyptian; however, he immediately modified his remark by observing that (ibid) ' ... hieroglyphic writing consistently ignored and omitted the vowels.' Yet elsewhere Gardiner (1957:209) states that 'In both Old and Late Egyptian a valuable clue to the vocalization of verb-forms is provided by the sporadic appearance of the sign for *i* ... at their beginning. This "prothetic *i*" undoubtedly indicates a short helping-vowel $^{e}$ before two initial consonants not separated by a vowel. Middle Egyptian examples are very rare, but a few may be collected from our texts ... ' In other words, they could be observed sporadically in every period of Egyptian history.

So also Diringer (1968:I,165), 'The twenty-two letters [of the North Semitic alphabet] expressed consonants only, though some of them came to be used as vowels.' But later Diringer comments (1968:I,220), 'As in other Semitic languages, the consonants ʼ[aleph], *w* and *y* were originally employed to express vowel sounds.' This statement is followed with a description of how these specific syllabics often changed their external vocalic aspects in response to different lingual situations or environments--i.e. according to whether they were spoken by Semitic Jacobites, by Greeks, etc., and also according to whether they were spoken or being written. This latter factor raises another important point.

For all the data that we possess in our archives and museums are inevitably mediated by the vehicles in which they are conveyed, which very often are orthographic in nature. Now the relevance of such a concern is that none of our modern paleographers, or speech scientists either, have yet acquired a definitive understanding of speech and writing, nor of the oral and written alphabets. This in turn suggests the presence of unresolved problems in the original Semitic prototype from which most modern writing springs, which again might reflect upon the Egyptian writings, themselves, with which the Semitic supposedly shares some historical affinities. Hence a pertinent question now arises; if we cannot yet comprehend our own lingual systems, either oral or written, how can we pretend to apprehend those of the Ancients?

Perhaps the most important thing which emerges from these interdisciplinary questions is the fact that the names of various lingual components are not nearly so significant as the things that the do, or in other words, the essential manner in which human phonations appear to operate. In this respect Bloomfield's term *syllabic* is an excellent designation for a specific kind of linguistic function, and yet if Stetson's percept was correct, i.e. Stetson (1945:89-90), ' ... the vowel is essential for the chest pulse of the syllable ... ', then syllabics must also always present some form of related vocalic phenomena.

Evidently the great American Semitist, W. F. Albright, concurred with this line of thought for, like Taylor before him, Albright (1934:27) identified certain passages in the Egyptian where the signs for *y* and *w* were used ' ... to represent the vowels *i* and *u*, respectively.' Albright (1934:28) even found ' ... alphabetiform groups, containing simple consonants, followed by *y* and *w* in the strictly alphabetic function of vowels ... ' (interestingly enough he added that, ibid, 'This modification is not found in our available material until the Hyksos period ... '). Albright's work was supplemented by that of his brilliant student, Thomas Lambdin, who provided further impressive data regarding the vocalization of the Egyptian. Unfortunately, however, space and time again preclude further comments.

It is doubtless also very unfortunate, too, that the work of such fine scholars as Albright and Lambdin still goes unnoticed, yet naturally it is difficult to counteract the weight of mainstream thinking and centuries of tradition. But problems relating to the Alphabet, and its connection with the Hieroglyphs, still puzzle. Diringer consistently addressed the problems of ancient orthography and he provides the following relevant interpretation (Diringer 1968:I,34), 'The Egyptian scripts were essentially national (in complete contrast with cuneiform writing); they originated in Egypt, they were employed only for Egyptian speech ..., they developed in Egypt, and they died out in Egypt.'

Yet on reading such words I immediately recall a certain hieroglyph discussed in this essay, and I cannot help but think that each time we write the letter *m* for example, we are once again recreating a little image of the ancient Nile.

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# OF COURSE A STRUCTURAL GRAPHEMICS IS POSSIBLE!

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This paper is a reply to a paper entitled "Is a structural graphemics possible?" (Daniels 1992) which was read to the 1991 LACUS Forum. Before I comment in detail on that paper, I want to point out two major differences between Daniels's theoretical approach to the study of graphemics and my theoretical approach to it. (1) Daniels assumes that the graphemics of a language should be described in terms of the phonemics of its language; I assume that the graphemics of a language should be described on its own terms. (2) Daniels assumes that the human brain has evolved separate parts which have specific powers to handle specific parts of language; I assume that the entire human brain has evolved a reasoning power which is able to handle all of the relatively few kinds of relationships that occur throughout language. Because neurologists cannot yet provide us with anatomical and physiological details of just how the brain handles language, our assumptions about how it does so depend largely on the requirements of our linguistic theories. Until we have available to us detailed anatomical and physiologial studies of the appropriate parts of the brain, any assumptions which we make about how the brain handles language are equally plausible, so long as they agree with known linguistic phenomena.

Early in his paper, Daniels has a small inconsistency in his argument: in his second paragraph, he writes about "the meaning of the term *-eme*", but in his next paragraph, he writes about "[those who use] the emic and etic terminology", adding the term and the concept *etic*. The term *phoneme*, from which *-eme* developed, was used long before linguists began to use the paired concepts of *emic* and *etic*. But his assumption that emics and etics must go together is often a good one; it is the basis of the structural phonemics which linguists have successfully used for many years for describing languages and for teaching contrastive phonology.

Daniels next says that we should not use the term *grapheme* unless we know what we mean by such terms as *graphemics*, *graphetics*, *allographs*, and *archigraphemes*. Fortunately, the meanings of these terms should be obvious to anyone who knows the emic-and-etic terminology. Figure 1 shows examples of both graphemic differences and graphetic differences among characters of written language. For the characters shown there, the horizontal differences are emic, and the vertical differences are etic. Figure 2 shows several characters which are emically the same, although

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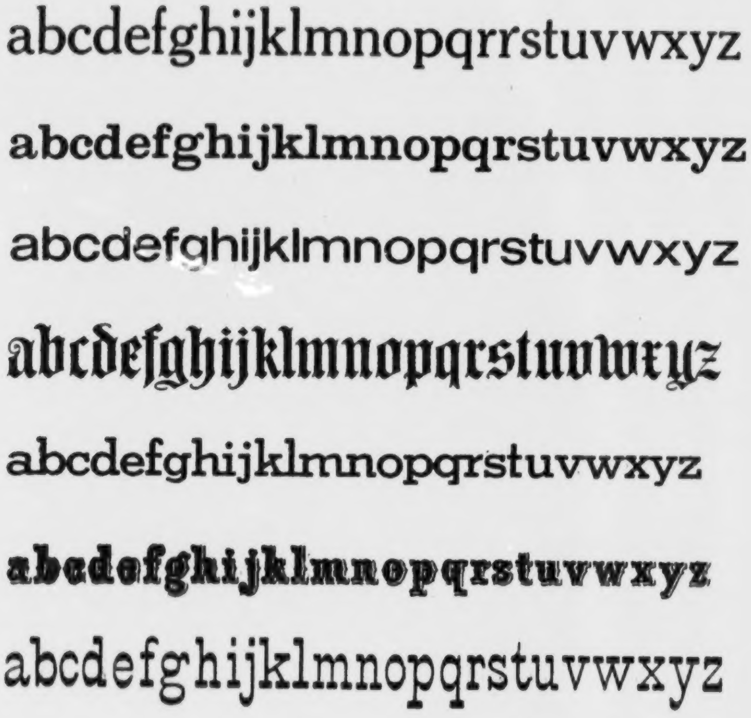
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Figure 1.

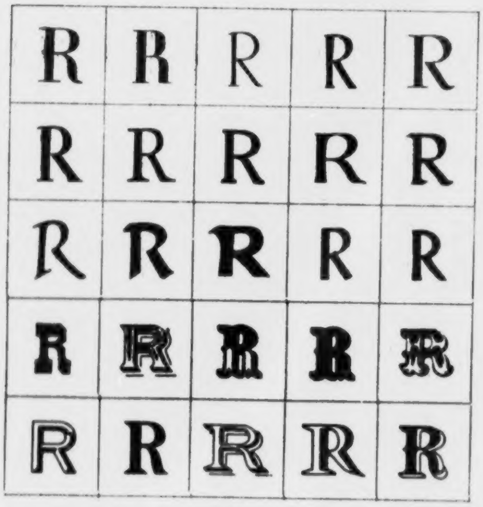

Figure 2.

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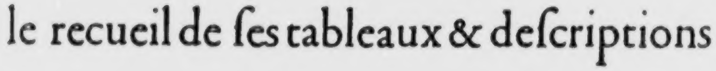
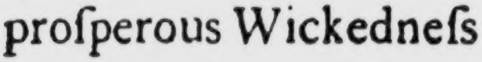
they are etically very different.

The term *allograph* has been given many meanings, but one of them is exactly parallel to the meaning of the term *allophone*. Until about 200 years ago, printing done with characters of the Roman script used two shapes for a lower-case letter *S*: a short one when word final, and a long one elsewhere. Figure 3 shows two examples of printing which contain these allographs.


le recueil de ſes tableaux & deſcriptions

(a) from a French book printed in 1587


proſperous Wickedneſs

(b) from an English book printed in 1704

Figure 3.

Figure 4 shows an archigrapheme. The German letters *I* and *J*, when written in some scripts, are embodied by the same shape of character when they are capitalized, but not when they are not capitalized; figure 4 shows examples of two German words written in such a script, with and without initial capital letters.

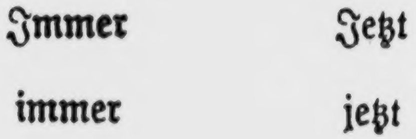

Jmmer Jetzt

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Figure 4.

All of these phenomena were mentioned by Hall (1960), and other examples of them can be found by anyone who knows the data of written languages, and who knows emic-and-etic theory, and who applies that theory to that data.

Daniels next says that he has found no linguists for whom *grapheme* means anything more than *letter* or *diacritic*. Unfortunately, this remark means little or nothing, because it depends on the term *letter*, which itself has no precise meaning. In a paper that I read to this forum two years ago (Herrick 1992), I discussed the many different meanings that the term *letter* can have. That paper of mine was read after Daniels's paper, but everyone who studies writing systems should realize that *letter* is a slippery term for which a self-evident meaning can never be assumed.

Next, Daniels criticizes two works (Schramm 1964, Malone 1975) about the orthography of Hebrew, and he says that he "supposes" that their authors used the term *grapheme* "only because it had a more scientific sound". However, the authors of those works, in addition to discussing characters for the letters of Hebrew, discuss characters like the dot called *dagesh*, which is not traditionally called a letter, but which can distinguish two written Hebrew words from each other by its presence or absence. In order to have an inclusive term for the letters and for other characters like *dagesh*, these authors may simply have taken the stem *graph-* and the suffix *-eme*, with their usual linguistic meanings, and put them together into the term *grapheme*, assuming that other linguists would understand the resulting term to mean a unit within a writing system that contrasts with other such units. To do so would be a good way of being as exact as is necessary under the circumstances within the emic-and-etic linguistic tradition.

Daniels next discusses several linguists and what they have said about graphemes. But before I discuss what he says about them, I must mention two serious problems that exist with the meaning of the term *grapheme*. One of these problems concerns the definition of the term *grapheme* itself; the other problem concerns the meaning of the suffix *-eme*.

Linguists have used two very different kinds of definitions for *grapheme*; for purposes of this paper, I will refer to these definitions by the ad hoc terms "graphemic grapheme" and "phonological-fit grapheme". By "graphemic grapheme", I will mean some sort of unit within the writing system itself; by "phonological-fit grapheme", I will mean a phoneme and the written characters for which it serves as a pronunciation when a written text is read aloud. For example, I would say that the letters *Q*, *U*, and *C* of Spanish are three of its "graphemic graphemes", and I would say that Spanish has the "phonological-fit grapheme" that is shown in figure 5, consisting of a relationship between its letters *Q*, *U*,

*phoneme* *"phonological-fit*
*fit grapheme"*

$$/k/ \begin{cases} \text{QU} & \textit{before}\ \text{E}\ \textit{or}\ \text{I} \\ \text{C} & \textit{elsewhere} \end{cases}$$

Figure 5.

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and *C* and its phoneme /k/, which can sometimes serve as their pronunciation.

Both of these concepts are needed in the analysis of a language that is both spoken and written, but I believe that the "graphemic grapheme" is a genuine linguistic unit, just as the phoneme is, and that the "phonological-fit grapheme" is a secondary unit which simply describes a relationship between two kinds of genuine linguistic units. In my own work, I use the term *grapheme* with the meaning that I have given here for the "graphemic grapheme", and I refer to the "phonological-fit grapheme" as the *graphic image of a phoneme.*[1] However, *grapheme* is often used with the meaning that I have given here for the "phonological-fit grapheme". It is used with that meaning in pedagogy, especially in the teaching of reading, and it is also used with that meaning by some linguists. Because the term *grapheme* has been used with both of these meanings, we must make sure which meaning it has whenever we encounter it.

We meet the other serious problem with the meaning of *grapheme* when Daniels complains that he cannot find a simple definition of *grapheme* anywhere in the literature. This problem is not really with the term *grapheme*, but with the meaning of the suffix *-eme*. We know that *-eme* first appeared in linguistics as part of the term *phoneme*, and every other use of it has been a metaphor on that original use, so the meaning of *-eme* should be found within the meaning of *phoneme*. But when we look in the literature, we find that nowhere is there a simple definition of a *phoneme*.

The major textbooks on structural linguistics usually have a chapter which discusses how to find something, and which ends up by saying that that something is to be called a *phoneme*. Pike (1947:63) gives what he calls a "recipe" definition, defining a *phoneme* as "one of the significant units of sound arrived at for a particular language by the analytical procedures developed" in his book. Hamp (1966), in his glossary of linguistic usage between 1925 and 1950, fills nearly three columns of small type with definitions of the phoneme and citations of their use. Gleason (1961: 9) says that "the phoneme is one of those basic concepts, such as may be found in all sciences, which defy exact definition". When

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[1] And I refer to the following relationship as the *phonic image of a grapheme.*

| *grapheme* | *phonic image of a grapheme* |
|---|---|
| C | */s/ before /i/, /y/, or /e/* |
| | */k/ elsewhere* |

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we realize how difficult it has been for linguists to define the *phoneme* and the concept of the *-eme* itself, we should not be surprised that no one has found a simple definition for the *grapheme*.

Daniels discusses the work of Josef Vachek, Robert A. Hall, Jr., and Ernst Pulgram as representatives of three schools of linguistics, and he also discusses the work of several other linguists.

When Daniels discusses Vachek's work, he says nothing about how Vachek defines a *grapheme*, but he does say several things that should not be allowed to pass without comment. When Daniels says that Vachek insists that "written language is not merely a representation of real language", he begs the question by suggesting that Vachek makes a contrast between "written language" and "real language". But Vachek makes a contrast between "written language" and "spoken language"; to Vachek, both of them are real language.

Daniels says, without adducing any reasons, that Vachek "can scarcely be followed" in a certain claim which he makes about the potential uses of language. But what Vachek claims, in the place to which Daniels refers, is that a language which is only spoken cannot be used for making preservable documents, such as archives. This is surely a valid statement about one potential use of language. Why cannot Vachek be followed in this claim?

Daniels also states that Vachek "claims that scripts do not contain units that are composed of distinctive features". If scripts are "composed of" distinctive features, their features must be written ones; but in the same statement, Daniels goes on to say that Vachek does not understand how written characters correspond to spoken features. It is not clear which kind of distinctive features Daniels means in this statement of his.

Daniels also faults Vachek for one of Vachek's comments about the origin of writing. Within the past several years, work by Schmandt-Bisserant (e.g., 1978, 1992), whose work Daniels does not mention, has told us a great deal about how writing originated in Mesopotamia. However, Daniels's mention of the origin of writing raises an important point about how we should approach the study of writing systems. Just as Saussure distinguishes between the synchronic and diachronic study of language in general, we need to distinguish between the synchronic and diachronic study of writing systems. To combine the two only leads to confusion.

When Daniels discusses Hall's work, he quotes Hall's definition of a *grapheme* as a "significant unit of visually perceived form" (Hall 1960) and then dismisses it by saying "I have no idea what that phrase means--it is not connected to either writing or language". But this definition by Hall is essentially a quotation from his own textbook (Hall 1964), in which he defines a *phoneme* as a "functional unit of sound" (24, 44) and defines a *grapheme* as a "functional unit of writing or of visual shape" (21, 264-5). Hall's meaning of *grapheme* can therefore be found by extrapolating from his meaning of *phoneme*.

When Daniels discusses Pulgram's work, he cites two of Pulgram's papers (Pulgram 1951, 1965), and he faults Pulgram for drawing parallels only between phonemes and letters of the alphabet, rather than between phonemes and all kinds of graphemes. Pulgram 1951 does discuss only letters of the alphabet, but nowhere in it does Pulgram say that letters are the only possible graphemes. And Pulgram 1965 discusses graphemes that are not letters of an alphabet.

But, even if Pulgram had done what Daniels says he did, Pulgram would have produced, in the development of our concept of the *grapheme*, an interesting parallel to something that happened in the development of our concept of the *phoneme*. The British phonologist Daniel Jones (1950) defined *phonemes* in a way that allowed only those for which symbols could be found on the IPA's articulatory chart. For Jones, linguistic units that were distinguished by differences of musical pitch were not phonemes, but *tonemes*; those distinguished by differences of length were not phonemes, but *chronemes*; those distinguished by differences of stress were not phonemes, but *stronemes*. Since then, we have come to use a more inclusive definition of *phoneme*, and in a similar way we may find out the proper extent of the meaning of *grapheme*.

Daniels concludes his discussion of Pulgram by saying that "again I do not find a definition of *grapheme*". However, Pulgram 1951 lists certain characteristics of a *phoneme*, along with parallel characteristics of a *grapheme*. Pulgram 1951 does say that the characteristics which he lists for a phoneme "are not meant, singly or in combination, as *the* definition of the phoneme", but in saying this Pulgram simply takes the same attitude that was being taken by other linguists at that time. And everything that Pulgram says about the *phoneme*, he also says about the *grapheme*.

Daniels also mentions the work of several other linguists and says that their definitions of *grapheme* are confusing and contradictory. But if we separate their definitions of "graphemic graphemes" from their definitions of "phonemic-fit graphemes", we find that their definitions of "graphemic graphemes" show no unusual diversity. Some of their definitions of *grapheme* look like definitions that have been given for *phoneme*, mutatis mutandis.

Daniels then claims to give three reasons why there can be no definition for a *grapheme*. When giving his first reason, he begins by discussing allographs, and he ends up by claiming that, if the 26 letters of the English alphabet are graphemes, and if capitalization carries meaning, which it does, then English must have 52 alphabetical graphemes, 26 capitalized and 26 non-capitalized.

And Daniels says that he knows of nothing like this in phonology. However, this is exactly like a well-known phonological problem in tone languages. If, for example, a language has five articulatory vowels and three tones, can it be said to have 15 different vowel phonemes? The usual structural analysis for such a language is that it has five vowel phonemes and three tone phonemes, the tone phonemes being suprasegmental phonemes occurring simultaneously with the vowel phonemes. "No phonemicist would dream of regarding two English phones with the same vowel quality but significantly different pitches as belonging to different vowel phonemes; rather, they would be assigned to the same vowel phoneme but to different pitch phonemes" (Wells 1945). Gleason (1961:410) has said that "capitalization is in many ways comparable to a 'supra-segmental' phoneme", and I believe that it should be treated in that way, so that the material which Daniels discusses can be described by 26 segmental graphemes which are letters and by one suprasegmental grapheme of capitalization.

When giving his second reason why there can be no definition for a *grapheme*, Daniels gets confused between "graphemic graphemes" and "phonological-fit graphemes". He mentions the English letter sequence *TH*, which is pronounced by the single phoneme /θ/, and which involves a "phonological-fit grapheme". But as a similar example, he mentions the letter sequence *FI*, which is sometimes printed by a single character, and which then involves a portmanteau printing of two "graphemic graphemes".

When giving his third reason why there can be no definition of a *grapheme*, Daniels discusses distinctive features in three different ways. He first discusses the features themselves, and he seems to be confused as to whether he is discussing phonic features or graphic features. When he refers to Korean writing as a "featural script", he presumably means that its marks correspond to phonic distinctive features; but when he discusses the possibility of finding distinctive features by studying how calligraphers draw marks, he presumably means that parts of those marks correspond to graphic distinctive features. And in his discussion of cuneiform and Chinese writing, it is not clear which kind of distinctive features he means.

Daniels next discusses distinctive features by commenting on of two of my own publications on graphemics: Herrick 1966, my master's thesis, which he discusses in a footnote to his paper, and Herrick 1977, which he discusses in the body of his paper. I am amazed at what he says about both of them.

Daniels merely says of my 1977 paper that it is stratificational and that he does not have the training to understand it. What can Daniels mean by this statement? To be a scientist, one must be able to read the literature in one's field. That is why all of us had to (or used to have to) learn to read German and French and, if necessary, other languages. When I was studying comparative Bantu, I remember being told that, if I wanted to become a real Bantuist, I would have to learn to read Flemish.[2] And it is the same for theories as it is for languages. If research in a certain field is being published in a certain theoretical format, and if one wants to work in that field, then one learns to read that format; and if one cannot do so, that is not the fault of the authors of the publications.

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[2] Much of the research on Bantu languages in the former Belgian Congo was done by Flemish-speakers, and, Belgium being officially bilingual, they insisted that the Belgian government publish their research in Flemish.

Daniels discusses my 1966 thesis at greater length, and, although it also is stratificational, he seems to show that he knows quite a bit about stratificational theory. He begins by saying that my thesis was written before I became "immersed in orthodox stratificational theory and notation". This is untrue; when my thesis was written, it was state-of-the-art. Fleming (1969) notes that stratificational notation has gone through several stages, and my thesis was written in what she calls the Stage II notation, which can use mathematical matrices. The graphic (or "wiring diagram") notation that is now used by stratificationalists was not introduced until Stage III.

Daniels next says that I do not analyze the graphic level of English because I have no rules which relate spelling to pronunciation. Such rules may be required by Daniels's assumptions about how the graphic level of a language should be described, but they are not required by mine. I assume that the graphemics of a language should be described entirely on its own terms, and that correspondences between the written and spoken forms of a language are something to be described later and separately.

Daniels's next statement, that I describe "the geometric shapes of the elements of a particular typeface", makes two allegations which I must discuss separately. He first alleges that I describe "geometric shapes", and shortly thereafter he says that my analysis is "strictly visual ... like acoustic phonetics, without interest in the production of letterforms ... like articulatory phonetics".[3] What I do in my thesis is more than merely to analyze the visible shapes of characters; I analyze how to perceive those visible shapes. This is an essential task of such an analysis. For historical reasons, and also for use in the teaching of second languages or second dialects, we are accustomed to describe phonemes in terms of the articulations which produce them. But, as I have shown (Herrick 1984), a language defines the distinctive features of its sounds and marks in terms of how they are perceived, not in terms of how they are produced. Their production is simply a way of making sounds and marks that can be appropriately and distinctly perceived.

Daniels also says that my thesis analyzes the elements of a particular typeface. This is untrue; it analyzes generalized shapes which neutralize differences between typefaces, and it sometimes shows several different but equivalent shapes for certain parts of certain characters (116).

Daniels then says that I consider seven different versions of each letter to be separate graphemes, and he says that I ignore the phonemic parallel of suprasegmentals. Both of these statements are untrue. I list 54 segmental graphemes for English (in-

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[3] From the context of this statement, I assume that Daniels does not mean it as a compliment.

cluding the 26 letters, each of them once), and I list five suprasegmental graphemes (51). Daniels does say that in my 1977 paper I separate out the suprasegmental graphemes, but I did the same thing in 1966.[4]

As his last comment about my 1966 thesis, Daniels says that it suggests no discovery procedures for analyzing other writing systems. But why should it do so? It is written in the form of a structural sketch, which never shows its procedures, although it may serve as an example of how to make similar analyses.[5]

In Daniels's final discussion of distinctive features, he mentions several writing systems, and he poses questions about how their distinctive features can be found and how their characters can be divided up or grouped into graphemes. These questions of his seem to be purely rhetorical, and he offers no answers to them. However, it happens that, here, Daniels has found an interesting linguistic problem. It is unlike anything in phonology, because a spoken utterance is perceived in one-dimensional time, while a written text is perceived on a two-dimensional visible surface. The internal organization of a written text can therefore be more complicated than that of a spoken utterance.

When we study the internal organizations of writing systems, we must remember that a writing system, such as that of English, which uses the Roman script has an especially simple internal organization. A text written in such a writing system is basically a string of letters, with a few suprasegmental graphemes and with, perhaps, a few diacritic marks above or below those letters and a few marks (like the *C-cedilla*) that need to be divided up. The internal organizations of other writing systems can be much more complicated. But by analyzing any writing system on its own terms, we can describe its graphemes and its graphotactics, however complicated they may be. Then, as a separate part of our linguistic analysis, we can find out how the elements of its writing system and the elements of its phonology correspond to one another.

Towards the end of his paper, Daniels again tries to refute the possibility of a structural graphemics, this time by simply asserting, as a self-evident fact, that the emic-and-etic terminology cannot be used for writing systems because of the way in which our human brains have evolved to handle language. When he makes this assertion, Daniels begs the question by asking us to accept a very restricted concept of language which is part of his theoretical assumptions. I expect that his assertion will be self-evident only to those who share his assumptions. He needs to tell us why he is sure that our brains have evolved separate parts which handle specific parts of a language, such as its phonology, its grammar, and its semantics. And he needs to tell us why he is sure that our brains have not evolved, instead, a general reasoning power which can handle all those kinds of relationships that characteristically occur throughout a language.

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[4] Daniels also says that I use the term *grapheme* without defining it, but I have already discussed that issue.

[5] The discovery procedures which I used for making the analyses in Herrick 1966 were basically the same ones, mutatis mutandis, as I learned for making structural phonological analyses.

Daniels also says that, although the phonologies of all languages are basically similar, there are many kinds of writing systems, and he lists some of them: alphabets, syllabaries, logographies, and others. However, these things which Daniels lists are not kinds of writing systems; they are ways in which the elements of a writing system and the elements of a phonology can correspond to one another.

Daniels does say that, because human brains are all so much alike and because phonologies are all so basically similar, any human can learn the phonology of any language. This follows from his theoretical assumption that a separate part of the brain has evolved a specific power to learn phonology. But the fact is that people can learn not only the phonologies but also the writing systems of languages, and there are linguistic theories which can handle this fact. Our brains are equipped to receive sensations from both our eyes and our ears. And, if our brains have evolved a general reasoning power which can handle all those kinds of relationships that occur throughout language, and if this reasoning power includes, among other things, the power to distinguish between the emic and the etic--between differences that matter and differences that do not matter, then any human can learn both a writing system and a phonology of any language. A linguistic theory which assumes that this can happen is a better description of the known facts of language than Daniels's theory is.

I therefore conclude that Daniels's attempt to deny the possibility of a structural graphemics arises from two things. It arises from his failure to distinguish a writing system from a relationship between a phonology and a writing system. And it arises from the limitations of his linguistic theory, which require him to ignore some linguistic facts that his theory cannot handle.

And I conclude that graphemes, which are described by structural graphemics, are part of language because they can be handled, like the other parts of language, by a general reasoning power which the human brain has evolved for handling all those kinds of relationships that characteristically occur throughout language.

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# REPLY TO HERRICK

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## Assumptions

Had Dr. Herrick offered a presentation that corresponded to his abstract, we'd have had an interesting discussion of the foundations of the theory of writing, since we have very different views of the nature of a writing system and its relationship to language.[1] Instead, he devoted his entire lecture (Herrick 1994b) to an attack on my previous article (Daniels 1991),[2] based in part on our fundamental disagreement, but, I fear, in large part on misreadings. I hasten to add that our relations remained perfectly cordial, both before and after he spoke.

In rereading my article, I find I made certain assumptions that I expected would be shared by my audience (such assumptions are inevitable when one is trying to present something new within the constraint of 15 minutes).[3] Fundamentally, I assume that a script or writing system is *not* part of a language. The evidence for this seems incontrovertible: to use Victor Yngve's familiar phrase, if you expose an infant to "communicating people," it *turns into* a communicating person—it learns a language. However, no matter how long you expose illiterates to readers and writers (or to texts and pencils), they do not turn into readers and writers: writing must be *taught*. This observation is tangential to Herrick's second "major difference" between our approaches: I don't know how brains work, of course, but I do know at least that Broca's and Wernicke's areas have been recognized for over a century as structures of the brain that are pivotal in the use of language.

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[1] The text of the abstract is given here as it appeared in the *Meeting Handbook* of the 21st LACUS Forum (Herrick 1994a):

> In a paper which he read at an earlier LACUS Forum, Daniels (1992) has argued that the graphemics of languages cannot be studied by the methods of structural linguistics. In making his arguments, he assumes that a structural graphemics should be neither autonomous nor synchronic, and he omits evidence of structural graphemic descriptions that have already been successfully written.
>
> Daniels bases part of his argument on the assumption that the graphemics of a language should be described in terms of the phonemics of its language. However, if we assume that a graphonomy, like the other parts of a language and like languages in general, should be described in its own terms, this part of his argument fails.
>
> Daniels bases another part of his argument on the evolution of the human faculty of language. However, if we assume (as linguists since Saussure have generally assumed) that a language should be described as a synchronically existing system, this part of his argument also fails.
>
> Daniels also has unnecessary trouble with the definition of the term "grapheme", with the application of the emic/etic distinction to graphemic data, and with the reading of some linguistic descriptions.
>
> After considering each of the arguments in Daniels's paper, the present paper concludes that the graphemics of languages can be described by the methods of structural linguistics, so long as the resulting descriptions are autonomous, synchronic descriptions.

[2] I would urge that all references to *LACUS Forum* articles be simply according to the date of the meeting reported (the cover date of the volume), since production delays are purely incidental—the 1991 volume was in fact distributed in 1993.

[3] The text of my article is printed as it was read at the Ann Arbor meeting, incorporating the distributed handout; additions based on participants' interventions are added in footnotes. To publish a significantly expanded version of a LACUS presentation seems unfair to those who attended the session, as well as inappropriate in the context of the report of an annual meeting.

The first "major difference"—whether "the graphemics of a language should be described in terms of the phonology of its language" (PTD) or "the graphemics of a language should be described on its own terms" (EMH)—can be discussed whether or not one holds to my fundamental assumption; the respective views receive labels in Herrick's *phonological-fit grapheme* versus *graphemic grapheme*. Suppose Herrick's formulation is correct, that a script is an integral part of a language, like a phonology, a morphology, etc. Then should not a search for correlation between form and function be an integral part of graphic analysis? We identify phonemes according not only to their form, describing them perhaps in terms of distinctive features (such that if we find voiced labial stops and voiceless alveolar stops in a language, we're likely to find voiced alveolar stops as well), but also according to their function (such as entering into minimal pairs—if English *bin*, *tin*, and *din* are all different morphemes, then *b*, *t*, and *d* are different phonemes). In that way, phonological analysis does not proceed independently of morphology. Considering only the *form* of English "segments" (a concept I am not fully ready to consent to; Daniels 1988: 100), we would have to admit both [k] as in *kill* and [q] as in *cool*; considering only complementary distribution, we would have to assign [h] and [ŋ] to a single phoneme.

If, as in Herrick 1977, we analyze a script (in this case, the Roman alphabet as used for English) in purely formal terms, I don't see that any interesting results are achieved: we seem to learn only that, say, the upper left corners of **n** and **p** are the same, or the middle right of **p** and **b**; the latter observation is, in fact, incorrect with respect to the common American cursive variety of English writing *p b*.[4] The many scholars who accept as a given for some language some inventory of characters of a script—for English, say, the letters of the alphabet—and describe the relations between its sounds and their spellings (whether they call their analysis *graphemics* or not)[5] are, in my opinion, doing what is necessary in the study of writing systems.[6]

A second observation supporting my fundamental assumption pertains to the sort of analysis just mentioned. It has always been assumed that whatever linguistic model one adheres to, whether it be the Latin-based grammar of olden time, the English-based grammar of the Chomskyans, or the requirement of allowing each language its own categories in the fashion of Boas, Sapir, and Bloomfield, that model applies equally to all languages: a description of Menominee is very like a description of Mon; there are linguistic universals, of one kind or another, and if one comes across a linguistic phenomenon that violates a tenet of one's theory, the theory must be adjusted. (This necessarily follows from the universality of human linguistic ability: whatever it is that the infants are doing when they become communicating people, they do it according to the people they are exposed to, irrespective of the people they came from, so there is some sort of unity underlying every language.) Writing systems are quite otherwise. They are interchangeable among languages; and they come in half a dozen or so distinct varieties with respect to their relation to the phonological substance they represent—such as syllabaries and alphabets (Daniels 1990a).

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[4] The popular typeface Palatino, incidentally, is a counterexample to a claim that <P> has "a region[ ] of the background[ ] which [is] completely surrounded by the mark" [Herrick 1977: 496]. The great creativity exhibited by type designers and calligraphers—in linguistic terms, a very large amount of free variation—is evidence that nothing so simple as Herrick's feature inventory is adequate to describe the shapes of the English alphabet.

[5] The best—really, the *only* synchronic, linguistically informed—analysis of English spelling to date, Carney 1994, does not use the term *grapheme*.

[6] This is the enterprise solicited from the many contributors to Daniels and Bright 1995.

## Specifics

Having, I think, laid out the assumptions underlying my work on writing systems, I must address Herrick's specific criticisms of my article. I urge readers to turn to Daniels 1991, and see for themselves that the text does not support many of his readings; many of the elliptical references in his work must be mystifying.

Because he arrives at the correct conclusion regarding emic and etic, I will not explain how his account of my use of them differs from my understanding of what I wrote.

He says I said "that we should not use the term grapheme unless **we know what we mean by such terms as** *graphemics*, *graphetics*, *allographs*, and *archigraphemes*."[7] What I said is, "… **without a detailed, explicit theory of** graphemics … [etc.]." I know what I *mean* by some of those terms—but my attempt to bring categories from phonological theory into grammatological theory is rather different from Herrick's. For him, differences in typeface are graphetic, and differences in letter are graphemic (his figs. 1 and 2); for me, differences in typeface (or between the handwritings of different people) correspond to differences in voice quality (between individuals) and hence fall outside linguistic analysis.[8] For him, round and lunate Greek sigma or long and curly s in earlier Roman type are examples of allographs; for me, those are one possible parallel of conditioned allophonic variation—but so is the Etruscan use of K before A or O, C before E or I, and Q before U for /k/ (which he cites, fig. 5, from its Spanish descendant). His example of an archigrapheme seems correct: in writing Fraktur, capital 𝔦 and 𝔧 are the same: ℑ. But something happened in the history of *i* and *j* (and *u* and *v*) in English that doesn't seem to have a parallel in historical phonology: at first those pairs were allographs, conditioned by position in the word (like ſ and 𝔰); later—after the first editions of Shakespeare and the Authorised Version of the Bible—the difference in shape became associated with the difference between the vowel and the consonant; but not until Noah Webster's first dictionary were they considered different letters, with words containing them alphabetized separately (Webster 1806: xxi). This is like phonemic split—but in language, a conscious decision to recognize the split, or not, is not possible.

I don't see that my complaint that people use *grapheme* as merely a fancy synonym for *letter* is vitiated by Herrick's observation that *letter* itself has no secure definition[9]—surely that reinforces my point; he overlooks the fact that both Gene Schramm and Joe Malone told me they did not use the word *grapheme* in any technical sense. At this point in his discussion comes what may be his definition of *grapheme*: "A unit within a writing system that contrasts with other such units." My question is still, What does this mean? What does *such* mean here? How are these "units" identified?

Does the difficulty in finding a definition for *phoneme* suggest that Halle (1959) was on the right track, and the term ought to be jettisoned? Isn't this a further argument that *grapheme* shouldn't be used?

I stand by my interpretation of Joseph Vachek's work; surely it is clear that in "his insistence that written language is not merely a representation of real language, that it is a coordinate system to be studied in its own right," I was referencing a caricature of those he argued *against*—especially since my next words are "in this he is not wrong"! But his claim that unwritten languages have not "developed [their] latent possibilities … to the full" is ethnocentric and unworthy of a modern linguist. The vast majority of the world's cultures were rich and full without writing; the importance of writing in Western civilization (and even here there is the strain represented in St. Francis and the Puritans and the Amish and other "plain people," who shun its trappings) must not be taken as a metric for all.[10]

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[7] He has introduced italics not in the original, so I add bold type for emphasis.

[8] Phoneticians have recently taken up the study of voice quality, characterizing it as extralinguistic (Laver 1994 index s.v.).

[9] Unfortunately the paper he refers to has not been published in the *19th LACUS Forum*.

Herrick should be pleased that I find Vachek to be in error by claiming that scripts do not contain units composed of distinctive features, since that claim holds whether one believes in his graphemic grapheme features or my phonological-fit grapheme features.

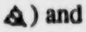
The work of Denise Schmandt-Besserat regarding the "token" background of cuneiform has never been convincing to those familiar with ancient Mesopotamian writing systems (e.g. the Sumerologists Lieberman 1980, Michalowski 1990); only with her publication of a catalogue of the tokens on which her conclusions were based (1992, vol. 2)—and its reorganization into an interpretable database—did it become clear that the data do not in fact support the hypothesis (Zimansky 1993). Nonetheless, her hypothesis would not be relevant to the origins of writing in China (where stimulus diffusion seems ruled out by the nature of Mesopotamian writing at the time of the probable beginning of Chinese writing-Daniels 1990b-or Mesoamerica-see Daniels 1988 on all three).

Robert A. Hall, Jr., writing in 1952 (as mentioned in my article), could not have been quoting his 1964 textbook definition; even so, "to read what Hall means by a *phoneme* and extrapolate" further weakens Herrick's insistence on the independence of the two levels. Moreover, Herrick should perhaps not have directed my attention to that book, where I find (p. 266): "It is, in theory, possible to analyze graphemes purely in terms of the structure of their visible shapes .... For our purposes, however, the only useful analysis of a graphemic system is in terms of the symbolization it affords to features of linguistic structure."

Ernst Pulgram ably defended his position at the Ann Arbor meeting; I stand by my interpretation.

Perhaps Daniel Jones meant that only *segments* could be phonemes; he knew full well that new symbols could be added to the IPA chart at will (as happens approximately decennially)—another characteristic of writing that is not shared by phonology (cf. Gleason apud Daniels 1991: 534).

Capitalization is not like tone, or other suprasegmental phonemes: it occurs (unless neutralized, as in the title line of this essay) only on the first segment of morphemes (cf. *McCarthy*) to which it applies, whereas tone, stress, etc. is a property of (not a presence or absence on) every segment in an utterance. A possible parallel to suprasegmental phonemes is the functions of hiragana, katakana, kanji, etc. in Japanese.[11]

The difference between phonological-fit grapheme distinctive features and graphemic grapheme distinctive features is exactly what I had in mind when saying "it is hard to believe" that the calligraphic dissection of SOAP, as opposed to the Korean or Gregg or Pitman shorthand correlation of graphic features with phonetic features, "belongs in a linguistic description." In Chinese and cuneiform, my point is precisely that no correlation between graphic and phonetic features is possible; I note that Herrick does not answer my question as to which are the graphemes in Chinese script—the full characters, their components (which are compressed forms of other characters), or the brush strokes? In cuneiform, there is a small number of recurring shapes (my example was ) and in most characters a residue. If the recurring shapes are separated out and labeled, is each of the residues then a graphic feature? Scripts like cuneiform and Egyptian hieroglyphs, which use semantic *determinatives*, make a parallel with phonology especially difficult, since the stream of writing includes characters which have no correspondence in the stream of speech, whose purpose is to disambiguate polyvalent morphograms.

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[10] It's amusing that Herrick faults me for mixing synchrony and diachrony, in that his own taxonomy of alphabets and scripts (1974), whose criteria are claimed to be purely descriptive (p. 12), turns out to look exactly like a stemma of the history of the descendants of Canaanite writing—with the addition of a mythological family, the "Mesropic," based on the chauvinist claim that Mesrop Mashtoc' devised the Georgian as well as the Armenian alphabet, whereas in fact Mesrop was not fluent in Georgian (Gamkrelidze 1990: 195, passage translated by Dee Ann Holisky). A taxonomy based solely on shape (which Herrick's is not) might have grouped Armenian with Ethiopic; spurious claims of historical relation have resulted from their formal (but not functional) similarity.

[11] This is nearly unique to this one script (cf. Korean hankul vs. hanji), so not a candidate for a grammatological universal.

As for the complaint that my unfamiliarity with stratificational linguistics is unprofessional, I can only say that cost/benefit analysis suggests it is unwise to attempt to master a complete subdiscipline in order to understand a single article, Herrick 1977 (and a semi-published M.A. thesis, Herrick 1966),[12] relevant to my interests. As Adam Makkai (pers. comm.) put it, stratificationalism is a very powerful theory; in itself that would seem to be in conflict with the common understanding that scientific theories should be as *weak* as possible. Perhaps this, as much as the opacity of its notation, underlies the fact that, however undeservedly, "the stratificational school became in the end no more than a coterie" (Matthews 1993: 86). What I know of Herrick's intellectual history was relayed to me by Allan Gleason and David Lockwood. I see now that *suprasegmentals* are mentioned in Herrick 1966; I must have been distracted by appendix III, which lists no fewer than 347 *somethings* ("columns of the lower graphemic level matrix and phenotypes"). The reason we still read such articles as Pike and Pike 1947 is generally not curiosity as to the nature of the Mazateco language, but because they tell us something of the nature and analysis of, in this case, syllables. Surely a thesis in an untilled field is the place to include a discussion of, in this case, the nature and analysis of writing systems (or alphabets, or the English alphabet, or printed English).[13]

Herrick refers me to his 1983 article on *interfacial strata* (I may be forgiven for not realizing, while scanning the table of contents of the volume, that such a term would have bearing on the study of writing systems). Only upon combining it with his 1986 article on computerization was I able to suppose that he seems to be talking about a system such as is embodied in OCR (optical character recognition) software: that in 1983, apparently, he was concerned with a way to go from the physical shape of a letter (his *mark*) to the identity of that mark as a **d** or a **V** (his two examples). The input to his process is *chilographemes*, which are things like "rounded corner" and "no loops"; only in 1986 does he reveal that "the file of chilographemes was written by the subprograms which model the measurement schedule and measurement procedures" (408 n. 1). But measurement of what? It can only be, of a printed text. Few people could look at the code of commercial OCR programs to see how they work; but however they work, I suspect that they do not work like eyes and

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[12] Hartford Studies in Linguistics seems to be a forerunner of Working Papers series published by linguistics departments; Northwestern University's Africana Library holds the series, but does not analyze it in the catalogue, so Herrick 1966 is probably not accessible through Interlibrary Loan.

[13] Herrick claims to describe roman alphabets in general, but his inventory of graphemes includes all and only the 26 letters of English, as well as the 10 numerals, 14 punctuation marks (. , : ; ' ' — - / * ( ) ! ?), 2 logograms ($ &), 2 spaces (word and sentence), and 5 suprasegmentals (initial capital, capitals, small capitals, italics, boldface)—overlooking the fact that in other languages, there are other numbers of letters (Hungarian counts *á, cs, dz, dzs, é, gy, í, ly, ó, ö, ő, ú, ü, ű, sz, ty,* and *zs* all as separate letters, as Spanish does *ll*; Danish adds *ø*, and similarly in other Scandinavian languages; while the *fi* ligature is optional in English (and then occurs only in printing), *ß* is (or was until recently) obligatory in German in specific environments; and so on).

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brains. (I suspect also that they don't work like Herrick's model, or he would be either a very wealthy man, or else involved in endless intellectual property litigation.) I don't know what odor Gestalt psychology is held in these days, but surely letters are perceived as wholes and not by analysis—at best, the Herrick model could be a model of *learning* the letters. More, though, is involved in learning to read than learning letters; hundreds of correspondences between letters and sounds, and between sets of letters (cf., in Chinese, characters) and words, must be learned individually; and I wonder whether the model could be applied at that level, too.

Since Herrick does not attempt answers to any of my questions as to how a graphemic analysis that is like a phonemic analysis is to handle the range of the world's scripts that are not descended from the Greek alphabet, he seems to concede "how impossibly complicated this material would be to analyze." It is noteworthy that, in his oral presentation, Herrick did not read the few paragraphs at the end of his lecture that could be construed as favorable to my article.[14] He closes by claiming that I have some sort of theory of language that somehow affects my view of the relationship of writing to language. I don't think this is so; I think my observations on writing are based on the observations of language learning vs. writing learning mentioned on the first page above; I think it is beyond dispute that the human brain includes numerous regions specialized for various tasks, and that among these are certain regions specialized for language—perhaps even for phonology.[15] I think it is necessary to distinguish between brain powers that are conscious (such as reasoning), which include those dealing with writing, and those that are not (such as "the power to distinguish between the emic and the etic—between differences that matter and differences that don't matter"), which include those dealing with speaking.

It seems to me that Dr. Herrick has inadvertently cited a great deal of material supporting the position that a writing system is qualitatively different from a sound system, that graphonomic (my, and Gelb's, *grammatological*) analysis should not proceed like phonological analysis, and that *grapheme* and associated terms cannot be applied in a way anything like the use of *phoneme* and associated terms. To adopt his useful distinction (though we might look for a more euphonious pair of labels), I don't find *graphemic graphemic* analysis useful, and will continue to explore *phonological-fit graphemic* analysis.

Since writing systems are human inventions, it makes sense to try to evaluate their relative merits (whereas we assume that no language is better than any other), to improve them, to invent new ones. A vital question, with practical applications as well as theoretical interest, is whether some metric can be found for evaluating the goodness of fit of a script to a language. Graphemic graphemes are the stuff of art history and typefounding and calligraphy. Phonological-fit graphemes are part of linguistics.[16]

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[14] Dr. Herrick provided me with a copy of his talk the evening before it was delivered. The next morning I cautioned him he couldn't possibly read it all in his allotted time, but he assured me he could read very fast—and he did (omitting only a small amount at the end). Perhaps that aspect of his performance is what prompted one member of the audience (I don't remember who) to tell me he seemed very angry, to have stored up a great deal of bitterness that finally found an outlet—I don't concur with the observation, but he ought to be aware that it was made.

[15] The day after this essay was sent out for comment, *Newsweek* 124/9 (29 Aug. 1994) arrived with notice (p. 52) of a report of a neuronal center dedicated to processing speech sound—in "last week's Proceedings of the National Academy of Sciences," not yet available at the library.

[16] I am grateful to Julius Nyikos for his generous comments on this material, and for offering the full list of letters of the Hungarian alphabet.

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# REPLY TO DANIELS'S REPLY

Earl M. Herrick
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If Daniels had merely spoken what he wrote in his 1992 paper, there would have been no need for anyone to publish a discussion or refutation of anything that he had said. It would have been enough for someone to verbally suggest to his hearers that they should check for themselves the cogency of his arguments and the accuracy of his quotations before relying on them. But, littera scripta manet--the written word endures. His 1992 paper has now become part of the permanent, published record of our science; and, if it were to remain there without comment, those who read it in the future might assume that they could rely on the accuracy of what he wrote in it. A written reply to his paper therefore had to be made, and because I was the person most often misquoted in his paper, I felt that I should be the person to make that reply.[1]

Daniels and I obviously disagree on the question of whether writing is or is not part of language--whatever the phrase "part of language" may mean, because the meaning which each of us gives to that phrase depends on the most fundamental assumptions which each of us makes about the nature of language. Neither of us can expect to convert the other; the best that either of us can hope for is that the next generation of linguists will adopt our ideas, having found them the more plausible after looking at all of the relevant facts. We must therefore try to make sure that those facts are straightforwardly presented. To help present those facts, I will make three kinds of comments about what Daniels says in his 1992 paper and in his reply to my paper in this volume: I will comment on the differences between the fundamental assumptions which he and I make about the place of writing within language; I will comment on some of his statements which seem to reveal how well he understands the science of structural linguistics; and I will comment on some of his statements which misrepresent my work and the work of other linguists.

## The position of writing vis-à-vis language

Because Daniels and I differ on the question of whether writing is part of language, we are interested in studying different

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[1] I want to again emphasize my continuing personal respect for Mr. Daniels. None of my comments, either here or in my paper which appears in this volume, are directed personally toward him; they are directed solely toward the words which, by publishing them, he has made part of the permanent record of our science.

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things about the marks which occur in the written communication channel of language. Daniels wants to study how those marks correspond to the spoken sounds of their respective languages; he assumes that those marks themselves are outside of language and that the study of those marks is not part of linguistics. I want to study those marks themselves, because I assume that they are part of their respective languages and that the study of them is part of linguistics; I am only secondarily interested in studying how those marks correspond to the spoken sounds of their respective languages.

Inconveniently, Daniels and I both say that we study the *writing systems* or *graphonomies* of languages, and we both refer to the basic units of what we study as *graphemes*. These two ways of using these terms have lead to considerable confusion. When Daniels uses either of the terms *writing system* or *graphonomy*, he means the relationship between the visible marks and the audible sounds which convey utterances in a given language. When I use either of those terms, I mean the part of a language that specifically concerns its visible marks. When Daniels uses the term *grapheme*, he means the mark or marks which correspond to a certain phoneme of a language. When I use that term, I mean a unit within the writing system or graphonomy[2] of a language (in much the same sense that a phoneme is a unit within the phonology of a language).

In order to avoid the difficulties which have arisen from these two uses of the term *grapheme*, I introduced the two terms *graphemic grapheme* and *phonological-fit grapheme* in the spoken version of my paper. In my own work, I ordinarily refer to the former idea simply as a *grapheme*. And while I was preparing the published version of my paper which appears in this volume, I thought better of using the term *phonological-fit grapheme*, and I replaced it with the term *phonic image of a grapheme*, which allows the use of the opposite term *graphic image of a phoneme*.

Because Daniels and I use the terms *writing system*, *graphonomy*, and *grapheme* with different meanings, readers may sometimes feel that he and I are talking at cross purposes. And when I use one of these terms with my meaning, Daniels may reply to it as though I had used it with his meaning, and vice versa. Readers of our work will therefore have to be careful to notice the meanings with which each of us has used each of these terms.

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[2] I prefer to use *graphonomy* to mean the analysis of the part of language that specifically concerns the visible marks of a language, corresponding to the term *phonology* for the audible sounds of a language. (Some linguists have used *graphology* in this way, but I believe that it has already been used too often with another meaning.) Daniels has used *graphonomy* to mean the correspondences between the audible sounds and visible marks of a language, although (following Gelb 1952) he also uses *grammatology* (which, so far as I know, has not been used with any other meaning). If all linguists assumed that both of these kinds of facts about language were worth studying, it might be convenient for everyone to distinguish between them by using *graphonomy* for the former of these meanings and *grammatology* for the latter of them.

The different meanings which Daniels and I give to the term *grapheme* may also explain some of the things which he says in his reply--for example, his complaint that I have not described the graphemes of Chinese. Using my definition of that term, the graphemes of Chinese would be a very interesting (though very complicated) subject for linguistic analysis; using Daniels's definition of that term, they cannot exist.

## Scientific theories and linguistics as a science

In his 1992 paper, Daniels defines the limits of the present discussion by asking whether a "structural graphemics" is possible; but, from what he says in that paper and in his present reply to my paper, it would seem that he has not recognized structural graphemes when he has encountered them.[3] In both his 1992 paper and his reply, Daniels insists that we must have a "detailed, explicit theory of graphemics". The examples of graphemic and graphetic contrasts, of allographs, and of archigraphemes that I give in my paper which appears in this volume are intended to show that structural linguistics ***already has*** a theory of structural graphemics, which is as detailed and explicit as any other part of its theory, and which has been constructed, rather informally, by taking structural phonemic theory and, by means of analogy, applying that theory to graphemics. I would certainly assume that Schramm and Malone used the term *grapheme* with the meaning that it would ordinarily have in structural linguistics: a combination of its meanings for the morphemes *graph* and *eme*. Even though they told Daniels that they "did not use the word *grapheme* in any technical sense", they could not have used it at all in their linguistic publications unless they had relied (perhaps unconsciously) on structural linguistic theory to supply their readers with an appropriate meaning for it.

Perhaps Daniels is confused because he is insisting on an explicit definition for his own meaning of *grapheme*, while other linguists are using *grapheme* with a meaning like the one which I have suggested for it in the preceding paragraph. This seems especially likely because he rejects my definition of a *grapheme* as "a unit within a writing system that contrasts with other such units". That definition, which is stated in terms much like those ordinarily used for defining a structural phoneme and which is (in spirit) much like Hall's and Pulgram's definitions (Hall 1960;

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[3] Perhaps Daniels did not notice the structural graphemes because the structural, emic/etic distinction does not, in fact, apply to those relationships between sounds and marks which, he believes, constitute graphonomy.

Hall 1964; Pulgram 1951; Pulgram 1965), makes sense only if one is trying to define a grapheme which is inside language--inside in much the same way that a phoneme is inside language.

In his reply to my paper, Daniels very surprisingly refers to "the common understanding that scientific theories should be as *weak* as possible" (his emphasis). I believe that it would be hard for Daniels to find any other scientist for whom this is a "common understanding". A scientific theory is ordinarily said to be better if it is more powerful or more concise than an alternative theory, i.e. if it describes more phenomena by using the same amount of theoretical apparatus, or if it describes the same amount of phenomena by using less of such apparatus. And the highest praise for a scientific theory is to say that it is "elegant", meaning that it is both very powerful and very concise.

Perhaps Daniels has confused scientific theory in general with a controversy that has arisen in linguistics about the writing of generative grammars. Linguists have differed on the question of how constrained the generative power of a grammar should be (see Harris 1993: 177, 180-181), and some linguists have insisted that the generative power of a grammar should be greatly constrained, so that it will be as weak as possible. It may be that Daniels has confused the idea of weak generative power in a grammar with the idea of general weakness in a scientific theory.

Daniels objects to my saying that what he says is based on some linguistic theory. He seems to regard the term "theory" as a pejorative, and he claims that what he says is based on observation, not on theory. But as I understand that term, one cannot think at all about a science without using some theory or other.

(Let me insert here a suggestion for future research on the question of whether we should study both spoken and written language: In his 1992 paper, Daniels insists that, because of the way that the human brain works, language must be primarily spoken rather than written. In his reply, he acknowledges that he does not know how the human brain works, but he insists that the existence of Broca's and Wernicke's areas makes it especially equipped to handle audible communication. I want to remind my colleagues that our species, *Homo sapiens*, has comparatively excellent eyesight. And I want to suggest that, because of our eyesight, we are especially equipped to handle visible communication. It may be that Broca's and Wernicke's areas merely equip us with an ability to use audible communication which is as good as our ability to use visible communication.)

In his reply to my paper, Daniels says that a phoneme should be defined both by its form (how it is pronounced) and by its function (how it helps to distinguish words from one another). He then criticizes me for describing the forms (the realizations) of some graphemes in Herrick 1977 without also describing their functions. In that paper, however, I was discussing only a few specific levels of language; one cannot do everything at once. The inventory of 26 letter graphemes for English, which I assumed there, is familiar and well accepted, and it is a commonplace that functional contrasts exist between all of them. I notice that Daniels assumes the same inventory of 26 letters when he says how writing systems should be described.

In his reply, Daniels also continues to denigrate stratificational lingistics as a theory, and he continues to insist that he should not have to read my publications on writing systems because they are written in stratificational notation. I can only repeat what I said in my paper about Bantuists having to learn Flemish: A scientist who wants to do research on a certain subject has to be able to read the languages (and notations) that other scientists have used for writing about it. Some linguists have looked foolish because they could not read certain languages; Lakoff (1969: 359) remarks that, if Chomsky had been able to read Latin, he would not have mistakenly declared Descartes to be the originator of some of the ideas in the Port-Royal Grammar.

And in a footnote to his reply, Daniels says that

> The great creativity exhibited by type designers and calligraphers--in linguistic terms, a very large amount of free variation--is evidence that nothing so simple as Herrick's feature inventory is adequate to describe the shapes of the English alphabet.

Daniels fails to notice that the difference between the diverse details of those marks and the simple features of my inventory is simply an example of the difference between etic distinctions and emic distinctions. The purpose of an emic analysis is to find the simple distinctions that function linguisticaly amid the free variations and other kinds of diversity that occur in the data.[4]

In his 1992 paper, Daniels says that Josef Vachek "can scarcely be followed" in a certain claim that Vachek makes about the potential uses of language. In my paper to which Daniels is replying, I point out, in support of Vachek's claim, that illiterate peoples cannot have archives. Daniels, in his reply, then attacks Vachek's professional integrity, saying that

> his claim that unwritten languages have not "developed [their] latent possibilities to the full" is ethnocentric and unworthy of a modern linguist.[5]

Daniels follows this attack on Vachek with a paean to the virtues and accomplishments of several illiterate people and peoples. But the things which Daniels says in justification of his attack on Vachek are not relevant to the point which I made, which was that illiterate people cannot have archives.

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[4] See Herrick 1966: 10-12 on type designers' awareness that they must exercise their creativity within the emic limits that are prescribed by the scripts for which they design characters.

[5] The bracketed addition is Daniels's. I hope (for my own sake) that Daniels's attack is really directed at Vachek and not at me, since I am the one who mentioned archives. (Does Daniels

## Misstatements and misquotations

Daniels seems to have had trouble reading the contents of my master's thesis (Herrick 1966). In his reply, Daniels accurately summarizes the inventory of English graphemes which I give in that work (51-56); I therefore assume that he has now looked at a copy of it. I am sorry that he did not do so earlier,[6] and I am also sorry that, having done so, he did not read more of it, because his reply contains some further misstatements about it.

For example, Daniels faults me for claiming to describe Roman alphabets in general while actually describing only the alphabet of English. But if he had read Herrick 1966 more carefully, he would have seen where I say that

> The linguistic description of Roman alphabets which is proposed by this thesis will be presented . . . through a detailed description of the English alphabet. . . . Although adapted in detail to the peculiarities of one language, this description should serve for most Roman alphabets and for most Roman characters. The English alphabet . . . has no letters which do not appear in many other alphabets of the genus, and it has only one diacritical mark. But every alphabet, like every language in general, should be described in its own proper terms; and every other Roman alphabet will probably require more or fewer graphons, and may require as well as more or fewer parameters. (49)

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realize that an ad hominem attack such as this may simply make its readers suspect that he has no other argument that he can make?)

[6] In his reply, Daniels acknowledges that, in Daniels 1992, he had discussed the contents of Herrick 1966 without having read it. He also says how difficult it would have been for him to obtain a copy of that work, saying that, although the Africana collection at Northwestern University has a copy of it, that copy is probably not available to him through Interlibrary Loan.

However, I remember (when I was a student at the University of Chicago many years ago) taking the elevated train up to Evanston to look at material in that collection.

Also, I hope that, when Daniels says that his information about my work came from Allan Gleason and David Lockwood, he is not trying to assign to them the responsibility for his misunderstandings of it.

Daniels also faults me for proposing a set of features which, he says, do not always describe the characters of written English because, for some typefaces,[7] the loop of the capital P is not completely closed at its bottom. But if Daniels had read Herrick 1966 more carefully, he would have seen where I say that

> for some Roman letters and for some Arabic numerals, when the figure has an approximately horizontal line near its middle meeting an approximately vertical line, the two lines need not actually meet. (46)

He would also have found on the preceding page, in figure 9, specimens of the characters "P B R 6 9 K", captioned as "Marks with something lacking" and "characters with incomplete horizontal middle line".[8]

Moreover, if he had read a little further, he would have found my delimitation of the data which I proposed to cover in that work:

> Among the styles of marks used in printed English texts, I have chosen as normal the marks made by what printers call "body types". (50)
>
> Marks of many [other] kinds . . . occur in the written communication channel. They are all more or less intelligible, but all of them must be thought over and interpreted before they can be encoded. (47)
>
> In this thesis, I will discuss only marks in the written communication channel which are projected unmistakeably. Such marks are the norms by which indistinct marks are judged and interpreted. These norms are linguistic. To psychology belongs the task of describing the judgement, ingenuity, and guesswork by which indistinct marks in the written communication channel are understood as being equivalent to these norms. (47)

Daniels also seems to have misunderstood the work of some linguists other than myself. For example, in my paper to which

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[7] This is also true of the examples of *P* which are inscribed on Trajan's Column in Rome.

[8] Daniels tries to say that my set of features for distinguishing among the characters of written English is defective because the middle right parts of cursive *p* and *b* are not like the corresponding parts of printed **p** and **b**. But I never said that those character-shapes have significant differences at the middles of their right (or left) sides. (Perhaps those cursive characters have their connecting lines at those places precisely because the language does not specify what the contours of those character-shapes must be there.)

Daniels is replying, I mention some limitations of Daniel Jones's work on phonology (Jones 1950). In his reply, Daniels says that "Jones . . . knew full well that new symbols could be added to the IPA chart at will." But if Daniels will look at Jones 1950, he will see that Jones regards the phonetic phenomena which I mentioned--pitch, stress, and time--as things which must be treated in completely different ways than those phenomena for which places can be found on the IPA chart.

Finally, I want to mention that Daniels sometimes seems to be unsure about what constitutes accuracy in quotation. When Daniels says of me in his reply that "the text does not support many of his readings; many of the elliptical references in his work must be mystifying", he is apparently trying to imply that I have used ellipses to distort the meanings of quotations. I am satisfied that all the ellipses which I have made both in my paper in this volume and in this reply are meaning-preserving, and I invite my readers to check for themselves whether this is true.

On the other hand, Daniels repeatedly fails to quote me accurately. Toward the end of his reply, Daniels says that "It is noteworthy that, in his oral presentation, Herrick did not read the few paragraphs at the end of his lecture that could be construed as favorable to my article". When I read my paper, I did feel pressed for time toward the end, and I omitted exactly one paragraph of my reading manuscript, which reads as follows:

> Daniels also tries to say that, although the phonologies of all languages are all basically similar, there are many different kinds of writing systems; and he goes on to list some different kinds of writing systems: alphabets, syllabaries, and others. But these things which he lists are not kinds of writing systems; they are ways in which the elements of a writing system and a phonology can correspond to each other.

This paragraph, after I had translated it from the lecturing-style spoken English of my reading manuscript into formal written English of the kind appropriate for publication, became the fourth paragraph from the end of the published version of my paper. I fail to see how it can be construed as favorable to anything in Daniels's article.

Also toward the end of his reply, Daniels says of me that "he seems to concede 'how impossibly complicated this material would be to analyze'." Although this phrase does not appear in the published version of my paper, it appears in my reading manuscript, which Daniels had a copy of. But in that manuscript, it appears as part of the following sentence:

> I get the impression that Daniels's questions are rhetorical, and that he wants to show how impossibly complicated this material would be to analyze.

Whether or not I erred in attributing this belief to Daniels, he has tried to attribute it to me, and he has thereby misrepresented my own belief about the matter.

I will not comment on more of Daniels's statements, because I suspect that the length of this reply has already strained the editor's hospitality. (After all, more space is needed to describe the true context of a quotation than is needed to take a quotation out of its context.) But I hope that I have said enough to suggest that those who read Daniels's reply should check on the cogency of his arguments and the accuracy of his quotations before relying on them.

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# VIII

# COMPUTATIONAL LINGUISTICS AND TRANSLATION

# STRUCTURAL SEMANTICS AS THE BASIS FOR THEME/RHEME

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The purpose of this paper is to propose a method for objectifying the given/new or theme/rheme distinction. The distinction itself has been an important concern in both Prague School and Systemic-functional linguistics. The method proposed is to equate givenness or thematicity with a measurable degree of semantic cohesion between an element of the text and those elements which precede it. This degree of measurement can be derived by subjecting the text to a computational analysis.[1]

A major concern both in Functional Sentence Perspective as developed by Prague School linguists, and in Systemic-functional linguistics is the extent to which the elaboration of a text represents new information — as opposed to the reiteration of information previously supplied. Although Functional Sentence Perspective has provided a basis for the insights of the Systemic-functional theory of new information, it is easier to begin with the simpler theory.

Systemic-functional linguistics adopts the perspective of the speaker, whose role it is to project that some elements of the clause realize information retrievable from the context of situation, and that other elements are relatively novel. The speaker maps this contrast onto clause structure by locating the tonic syllable, which carries the most extreme change within the intonation contour of the clause or of some clause segment. The tonic syllable marks the grammatical element in which it falls as the 'focus of information', and thus also as the end of the stretch of 'new' information. The beginning of this stretch, and thus the end of contrasting 'given' information, is possibly indeterminate. Usually, but not always, a clause begins with given information. New information ensues at some point, and terminates with the last clause element realizing lexis. In the marked case, however, the tonic falls elsewhere than on the last lexical item of the clause, i.e., on a grammatical item, or on some antecedent item of lexis (Halliday, 1985:274ff.). In this case, the tonic is seen to designate specifically the most inclusive grammatical element in which it falls as new information, everything else in the clause, before or after the new information, contrasting specifically as given (Halliday, 1967:207-208).

Functional Sentence Perspective offers a complementary theory of 'communicative dynamism'. The information contrast is between theme and rheme.[2] Theme is that stretch of the clause which is the semantic foundation on which the information of the whole clause is built. Rheme is the elaboration of information. Unlike the Systemic-functional given/new contrast, the theme/rheme

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contrast is not sequence bound, although it commonly happens that the theme, or part of it, precedes the rheme. The rheme is divided between the 'transition', and the 'rheme proper'. Theme, transition, and rheme proper represent three increasing degrees of communicative dynamism. These degrees may be recognized by resort to three principles of determination. The primary rule is context: deictic and pronominal reference items carry an extreme degree of context dependence, and thus a low degree of communicative dynamism. Grammatical elements headed by these items are necessarily thematic. The secondary rule is semantics: semantic roles in the clause belong to either of two scales of communicative dynamism. The Existential Scale contrasts three roles, Setting, Appearance/Existence and Phenomenon. The Quality Scale contrasts the roles of Quality-Bearer, Quality, and Specification. In each of these two scales there is an increasing degree of communicative dynamism. Combining and elaborating the two scales offers seven separate levels of increasing communicative dynamism: Setting, Appearance/Existence, Phenomenon, Bearer, Quality, Specification, Further specification. The elements of the clause represent a selection from among these possible roles, with their attendant relative degrees of communicative dynamism. The tertiary rule is simply sequence: if context and semantics do not pertain, then the rise in communicative dynamism is simply from the beginning to the end of the clause. Identification of theme, transition and rheme depends on the interaction of these three principles (Firbas 1986:42-54).

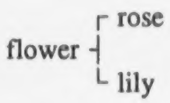
Despite the great differences between these two complementary approaches, the basic phenomenon they both describe is the same: the elaboration of a text both with new information and with information previously supplied. A third complementary approach is now proposed. The given/new distinction is semantic, and realized lexico-grammatically in a variety of ways. Grammatical realizations, like pronominal and deictic reference, can be interpreted as substitutions for lexis (cf. Halliday & Hasan 1976:31ff.). Givenness of information is thus interpretable as the degree of semantic connection among the lexical items and lexical substitutes of the text, and newness is the relative absence of semantic connection. A model for the semantics of the text is structural: the lexical components of the text are connected together in a network of relations. The degree of connection between one lexical item and another is the function of their relative distance in the network. Within the text, each lexical item or lexical substitute is partly given and partly new: perception of the item as contrastively given or new depends on the degree of average connexity with all the preceding items in the text within a span of relevance.

The view of semantics taken here is that it is a network of relations (Halliday, 1978:40-41). Lexical semantics is a network of relations realized by lexical items in some manifestation of language. The lexicon of an entire language makes for a highly differentiated network; some text or other as a subset of the general lexicon is less differentiated than that in virtue of the limit on the kinds of relations realized. It is important to see that the lexical semantics of one text is no more or less complete as a semantic network than that of any other; it is only more or less differentiated, as well as likely having different sorts of lexical relations. Thus the famous 'A rose is a rose is a rose' as quoted can be referred to a semantic network as complete as that of any other text, but rather undifferentiated in view of its sparse lexis.

The relations in question are primitive semantic relations which include but are not limited to identity, meronymy (part-whole), hyponymy (superordinate-ordinate), etc. Thus lexical item 'rose' relates to itself by identity, to 'garden' by meronymy, and to 'flower' by hyponymy. Compound relations include but are not limited to co-meronymy, co-hyponymy, etc. Thus lexical items 'rose' and 'lily' relate to 'garden' by meronymy and each other by co-meronymy, but also to 'flower' by hyponymy and to each other by co-hyponymy. These four primitive and compound relations account for a vast number of lexical relations in texts (Halliday 1985:310-313; Leech 1974:100-102; Lyons 1977:291-295, 311-317).

These relations can be quantified by representing them in the form of a semantic graph, a set of points or 'nodes' taken to represent linguistic tokens, in this case, lexical items, and a set of connections among them or 'edges', which in this case are taken to represent semantic relations. This particular kind of semantic graph is non-vectored, in the sense that the edges have no direction; and it is costed, in the sense that each edge representing a primitive semantic relation is assigned a numerical value (cf. Gersting 1987:158ff.).

It is convenient to use the ordinary components of system network notation (cf. Kress 1976:15) to represent such a graph, since it has long since been recognized that system networks are a species of 'conceptual' graphs (cf. Sowa 1983:29). In this notation compound semantic relations constitute a bar system in which the entry condition is the common synonym and the choices are the co-synonyms, as in the logic of 'if flower then either rose or lily':



Other system network conventions, such as the bracket system, complex entry conditions, wires and gates are employed as needed, and assigned an appropriate arithmetic.

An analogy may be drawn between the axes of description in grammar and the axes of description in textual cohesion. Syntax in grammar is analogous to the linear aspect of lexical cohesion in texts, i.e., the cohesive relation between one textual item and another to which it is ordered as left-to-right or before-and-after. Paradigm or system in grammar is analogous to the paradigmatic aspect of lexical cohesion in texts, i.e., the synonymic relation between one textual item and another. Just as all grammatical items in a text are relatable by reference to a network model of lexico-syntax, so also are all lexical items relatable by reference to a network model with most of the syntax left out.

Measurement of lexical cohesion must be made along both the linear and the synonymic axes of description. One conceivable way of measuring along the linear axis is scalar, say, counting the twentieth item previous to the node as having twice the distance of the tenth item previous to the node. It is probably more psychologically realistic to count by span instead. In this approach, all items within a span are deemed to be equally close to the node, and all items beyond the span do not relate to the node at all. Measurement along the synonymic axis is scalar, however: true synonymy is a more distant relationship than identity, and some synonyms are semantically more distant from the nodal item than others.

Since synonymy is represented as a costed graph, the edges of the graph must have precise arithmetical values. The identity relation in the graph concept is seen to be an edge which begins and ends in the same node (i.e., a 'loop': Gersting 1987:160). Other primitive relations are modelled as edges which connect mothers and daughters, e.g., superordinate and ordinate or part and whole. The path from a node to its mother (in the system network notation from a choice to its entry condition) actually includes two edges, each assigned the value of 1, and adding to 2. A compound relation is modelled as an edge which connects sister to sister, e.g., co-hyponym to co-hyponym. The path from a node to its sister (in the system network notation from one choice in a system to another) is equivalent to the path from a daughter to the mother to another daughter, that is, through three edges, and adding to 3. Thus identity as the closest semantic relation is assigned the value of 1, other primitive semantic relations are assigned the value of 2, and compound relations are assigned the value of 3. More distant semantic relations in the graph are costed additively on the same basis.

It should be recognized from the outset that both the qualitative and quantitative structures of any such graph are entirely relative to the size and nature of the lexicon of the text it represents. The costing of the graph only represents constant scalar proportion. The cost of the path between two lexical items in one text may be entirely different from the cost for the same two lexical items in another text. This is the quantitative equivalent for the observation above that the lexical semantics of a text may be more or less differentiated than the semantics of another text. It may in addition be differentiated to different degrees within the parts of different texts which are otherwise comparable in having some similar lexis.

To go from the measurement of lexical cohesion between two items in a text to the measurement of the givenness of a lexical item in a text is a process of integrating all the separate lexical cohesions of a nodal lexical item with respect to all previous lexical items within a selected span. That is to say, the givenness of a nodal lexical item in a text with respect to some one previous lexical item is equivalent to the lexical cohesion between the two. The givenness of the nodal item with respect to all previous lexical items in a span is the sum of all the separate cohesions which it maintains severally with all those previous lexical items.

Givenness can be seen as the reciprocal of newness. Newness can be taken as proportional to the cost of travelling the semantic graph from the nodal item to items which occur previous to it in the text. Newness with respect to one item is proportional to the cost of one such path; with respect to all previous items in the span, it is proportional to the sum of the costs of all such paths. As the reciprocal of newness, givenness with respect to one previous item can be represented proportionally as:

$$g \sim 1/c$$

where $g$ = givenness and $c$ = cost. Givenness with respect to all previous items within a span $n$ can be represented as:

$$G \sim g_1 + g_2 + \ldots g_n.$$

In scalar rather than proportional measurement, the values for givenness may be stated numerically. For givenness with respect to a single previously occurring lexical item:

$$g = 1/c.$$

Givenness with respect to all previous items in the span is:

$$G = g_1 + g_2 + \ldots g_n$$

or:

$$G = 1/c_1 + 1/c_2 + \ldots 1/c_n.$$

The average givenness for a lexical item with respect to all previous items in the span is:

$$G_{av} = (g_1 + g_2 + \ldots g_n)/n$$

or:

$$G_{av} = \frac{1/c_1 + 1/c_2 + \ldots 1/c_n}{n}$$

Computerized analysis of the text involves the preparation and processing of input files. Step one is the selection, lemmatization and filing of a text, step two is the abstraction and filing of a lexico-semantic graph, step three is the computational processing of the input files together and the interpretation of the result file. At the present state of development, all of these steps are expensive in user and cpu time, which limits the size of texts. For example, the number of completed paths $P$ to derive the givenness of lexical items in a text of $N$ lexical

*Figure 1: extract from graph 8*

```
                                                                 |-man
                                                   |-individual->|
                                    |-person_type->|             |-boy
                                    |              |
                                    |              |-role->-parent
                                    |
                                    |                            |-blotch
                                    |                            |
                                    |                    |-skin->|-scar
                                    |                    |       |
                                    |                    |       |-wrinkle
                                    |                    |
                                    |       |-body_part->|-hand
                                    |       |            |
                                    |       |            |-neck
                                    |       |            |
                                    |       |            |       |-cheek
                                    |       |            |-face->|
                                    |-body->|                    |-eye
                          |-person->|       |
                          |         |       |                 |-gaunt
                          |         |       |-body_attribute->|
                          |         |       |                 |-thin
                          |         |       |
                          |         |       |-disease->-cancer
                          |         |
                          |         |          |-1-----\   |-benevolent
                          |         |          |        >->|
                          |         |-emotion->|  good-/   |-cheerful
                          |         |          |
                          |         |          |-2--\
                          |         |                >->|-sad
                          |         |             4-/
                          |         |
                          |         |        |-good
              |-concrete->|         |        |
     |-thing->|           |         |        |      |-unlucky--\
     |        |-abstract..|         |-value->|      |           >->|-salao
all->|-process...         |                  |      |    worst-/
     |                    |                  |      |
     |-quantity...        |                  |-bad->|-3--\
                          |                         |     >->|-worst
                          |                         |  5-/
                          |                         |
                          |                         |--4-
                          |
                          |-geophysical...
                          |
                          |-fabric...
                          |
                          |-...
                          |
```

items is represented by the equation:

$$P = (N^2 - N)/2$$

Thus the number of paths or the number of calculations of the cohesion between each two lexical items in a text of 100 lexical items is 4,950 paths.

Before entry, the text file must be lemmatized to represent formal items consistently. All lexical items are reduced to citation forms, e.g., nouns in singular non-possessive, verbs in base form. Proper nouns and quantity related forms are treated as if lexical; personal, relative, and reflexive pronouns are replaced by their antecedent lexis; and lexical phrases are reduced to strings. The actual entry form of the text is as a series of PROLOG language data predicates (Clocksin and Mellish 1987:2-4) containing as arguments each successive grammatical or lexical item in the text, the number in series of each lexical item, and the number of immediately preceding lexical items to omit from the analysis (the 'lead', below).

The graph must abstract from the lemmatized text all of the items treated as lexical, organized by their lexical relations. In order to make sense of the latter, it is necessary to postulate and include additional items to account for compound primitive relations. In the truncated graph diagram of Figure 1, items postulated to account for co-meronymy, co-hyponymy, etc., are bolded. Included among such items are the Systemic-functional classes *thing, process, quantity, material process, mental process, relational process,* etc. The graph is input as a system network, using the PROLOG language application SYSPRO ( © 1986, 1988 M. Cummings; cf. Cummings 1987, 1990).

The PROLOG language program ASCIT (*Analyzing semantic connexity in texts*, © 1992, 1993 M. Cummings) reads from each successive predicate in the text file the nodal item, its number in series and the number of items previous to omit from the analysis (the 'lead', below). The user has already designated by number the item with which to begin, the size of the span, and the limiting scalar value for cohesion (the 'focus', below). Each previous item in the span is then read from the text file in succession, and at each step a backwards-chaining path in the graph from each of the two items is initiated, with a summing of the costs in each branch (cf. Bratko 1986:224ff. and Cummings 1989). When the two branches cross at the most economical point, the reciprocal of the total cost is calculated, and at the completion of all such paths, the sum of such reciprocals is calculated as the givenness of the nodal item. The average givenness is also derived, by dividing the total by the length of the span, or in the case of the initial part of the text, by the number of actual items preceding the nodal item.

Following in Figure 2 is the output file of a text. Each grammatical and lexical item from the text input file is output successively and each lexical item is glossed interlinearly with computed values for the total givenness, and below it the average givenness of the item. All values are decimals rounded off to two decimal places. (The output file has been edited to supply the original unlemmatized form of the text in italics on every fourth line.)

The text offered as a sample is the first three paragraphs from Hemingway's *The Old Man and the Sea* (1952). All of the ASCIT analyses of texts at the present stage have been from this novel or from a recent issue of *Scientific American*, each done with different segments of contiguous text, with graphs of more or less inclusiveness, and with settings for different spans and focuses. The disadvantage of just this segment of text is that it opens the novel, and so the span setting of 30 isn't actually realized until well into the first

*Figure 2. Analysis of semantic cohesion in ¶¶ 1-3*

```
Text10x30x.out  ASCIT4X/GRAPH8  SPAN = 30  FOCUS = 100  CPU 18'  REAL 53'
EXPONENTIAL FOCUS = 2  SEPTEMBER 22, 1993

      0.01          0.03 1.02 1.02          2.03 2.03 3.03 3.04 0.18 0.18
      0.01          0.01 0.34 0.34          0.41 0.41 0.43 0.43 0.02 0.02
the   man  and the  sea  old  man/ was  an  old  man  old  man/ fish alone
The Old Man and the Sea.   He     was   an  old  man     who  fished alone

           0.11            0.32           4.09 4.09      0.09 0.13
           0.01            0.04           0.31 0.31      0.01 0.01
in    a    skiff in   the gulf_stream and old  man/ had  go   eighty_four
in    a    skiff in   the Gulf Stream and      he    had  gone eighty-four

0.30  0.43         0.09      1.33           0.27  0.28  1.39      0.70
0.02  0.03         0.01      0.09           0.01  0.01  0.07      0.03
day   now  without take a    fish in   the  first forty day   a   boy/ had
days  now  without taking a  fish. In  the  first forty days a    boy  had

           5.30 5.29            1.37  2.46              2.41      1.85
           0.21 0.21            0.05  0.09              0.09      0.07
been  with old  man  but  after forty day   without a    fish the  boy
been  with  him.     But  after forty days without a    fish the  boy's

0.66         0.34 2.82          4.38 5.58     1.67 0.53            0.91
0.02         0.01 0.09          0.15 0.19     0.06 0.02            0.03
parent/ had  tell boy  that the old  man/ was  now  definitely and  finally
parents had  told him  that the old  man  was  now  definitely and  finally

0.45   1.54            1.18  0.72      0.84              3.64      1.21
0.01   0.05            0.04  0.02      0.03              0.12      0.04
salao  salao/is   the  worst form of   unlucky and  the  boy/ had  go   at
salao, which is   the  worst form of   unlucky, and the  boy  had  gone at

4.53  1.69   0.65       0.42    0.46 1.37 0.22  0.51  0.71 1.48       0.48
0.15  0.06   0.02       0.01    0.02 0.05 0.01  0.02  0.02 0.05       0.02
boy   parent order in   another boat boat/catch three good fish the  first
  their     orders in  another boat which caught three good fish the first

0.70        0.24     4.53 0.85      0.48     1.46 1.82 0.33      0.37 0.60
0.02        0.01     0.15 0.03      0.02     0.05 0.06 0.01      0.01 0.02
week  it/  make the  boy/ sad  to   see  the old  man/ come in   each day
week. It   made the  boy  sad  to   see  the old  man  come in   each day

      2.45 2.71 0.77  1.09        3.58 0.49   1.32          0.27 2.34 2.65
      0.08 0.09 0.03  0.04        0.12 0.02   0.04          0.01 0.08 0.09
with  old  man  skiff/ empty and  boy/ always go  down to   help old  man/
with     his    skiff empty and   he   always went down to   help     him

0.32               0.33 0.48          0.48      0.48            0.78 1.71
0.01               0.01 0.02          0.02      0.02            0.03 0.06
carry  either the  coil line or   the gaff and  harpoon and the sail sail/
carry  either the coiled lines or the gaff and harpoon  and the  sail that

      0.35             0.70      2.75      0.70       0.67  0.70      1.25
      0.01             0.02      0.09      0.02       0.02  0.02      0.04
was   furl around the  mast  the sail/was  patch with flour sack and  furl
was furled around the mast.The sail was patched with flour sacks and,furled,

3.98  0.48           1.02      0.58      0.39        2.35 2.43       0.39
0.13  0.02           0.03      0.02      0.01        0.08 0.08       0.01
sail/ look like the  flag of   permanent defeat the  old  man/ was   thin
 it  looked like the flag of   permanent defeat. ¶ The old man was   thin

      0.39       0.47 0.31             0.47      2.32 3.42 0.39      0.66
      0.01       0.02 0.01             0.02      0.08 0.11 0.01      0.02
and   gaunt with deep wrinkle in   the back of   old  man  neck the  brown
and   gaunt with deep wrinkles in  the  back of      his    neck. The brown
```

```
0.50              0.56       0.79 0.69        0.56 0.29       1.54 0.24
0.02              0.02       0.03 0.02        0.02 0.01       0.05 0.01
blotch  of   the  benevolent skin cancer the  sun/ bring from sun  reflect
blotches of  the benevolent skin cancer the  sun brings from its reflection

          0.79   0.67          2.34 2.45 0.57       1.80   0.34
          0.03   0.02          0.08 0.08 0.02       0.06   0.01
on    the tropic sea/ were on  old  man  cheek the  blotch/run  well down
on    the tropic sea  were on     his   cheeks. The blotches ran well down

      0.59      3.31 3.41 1.11      4.28 4.39 1.00 0.25      1.57 0.21
      0.02      0.11 0.11 0.04      0.14 0.15 0.03 0.01      0.05 0.01
the   side of   old  man  face and  old  man  hand/have the  deep crease
the  sides of      his    face and     his    hands had the  deep-creased

1.10       0.21   0.81  0.45          0.21      0.26            1.90
0.04       0.01   0.03  0.02          0.01      0.01            0.06
scar  from handle heavy fish on  the  cord but  none of   these scar/were
scars from handling heavy fish on the cords. But none of  these scars were

0.59   1.46 1.33   2.53      1.33   1.66  1.45          1.22          3.37
0.02   0.05 0.04   0.08      0.04   0.06  0.05          0.04          0.11
fresh  deep crease scar from handle heavy fish on  the  cord/were as  old
fresh.                  They                                 were as  old

      0.63            0.73     0.46   0.43             3.37 2.31      3.36
      0.02            0.02     0.02   0.01             0.11 0.08      0.11
as    erode in   a    fishless desert everything about old  man/ was  old
as    erosions in a   fishless desert. ¶ Everything about him    was  old

        3.36 3.31 0.66      4.35 2.31 1.40                0.73
        0.11 0.11 0.02      0.15 0.08 0.05                0.02
except  old  man  eye  and  old  man  eye/ were the  same color as   the
except    his     eyes and       they      were the  same color as   the

0.77            0.50          0.32
0.03            0.02          0.01
sea   and  were cheerful and  defeat
sea   and  were cheerful and  undefeated.
```

paragraph. However, it is a text with a great many pronominal references, and amply illustrates the result of substituting equivalent lexis for pronoun forms.

The five variables to be set for ASCIT are the start, span, focus, exponential focus, and lead. The start is the number of the lexical item with which to begin the analysis, not important here since this analysis was of the whole text. The span selection of 30 with other texts has tended to produce more convincing results than other spans tried (cp. Svoboda 1981:154, 178). The focus setting of 100 means that for any cost greater than 100 the cohesion between two items will be counted as zero — a focus this large effectively admits all costings. The exponential focus is an exponent on the cost values in the equation:

$$G_{av} = \frac{1/c_1^x + 1/c_2^x + \ldots 1/c_n^x}{n}$$

This variation on the first form of the equation (above) permits choices of exponent greater than 1, which compresses the range of values for new information. The exponential focus for this text was set at 2. The lead is a

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number associated with each lexical item which is the number of other lexical items immediately preceding which are excluded from the analysis. In the analysis of this text, I began by isolating the boundary between Systemic-functional theme and rheme, and used the lead to exclude from the givenness of each item in a theme its potential cohesion with the other items in the theme. The rheme was served similarly, so that in every such clause segment, givenness is deemed to be only with respect to items preceding the beginning of that segment.

The main problem in looking at results is to decide which values represent 'new' information and which 'given'. The boundary value is chosen simply to account for the results in the easiest manner. If the value of 0.05 is chosen as the lower limit for the average givenness of 'given' lexis in this text, then the analysis is least counter-intuitive. In Figure 3 following is a computer generated chart for the distribution of the values of averages in Figure 2. With the exponential focus set at 2, the 'new' end of the distribution is very distinctive as a massive accumulation in the range 0.01-0.03, which helps suggest that the boundary is somewhere adjacent. In the editing of the output text in Figure 2, lexis which is deemed given has been underlined. Other notational devices are slants for the boundaries between Systemic-functional theme and rheme, and bolding for items in the original unlemmatized text which the analysis suggests would carry the tonic in a spoken analogue.

Generally speaking, the tonic is assigned either to the last lexical clause element, or, preferentially, to the last clause element before the onset of given lexis subsequent to or even within the Systemic-functional theme. An exception is made to the latter condition in the case of pronominal modifiers, which the computer always registers as given, but which do not seem to imply the termination of new information. Another such exception is in the case where an embedded clause begins with thematic material.

Following in Figure 4 are the same results in a different form. Here the original text is interlineated with a scale of degrees from 0.01 to 0.15+. The readings of average cohesion are mapped onto the scale in dots under the formal items, and the dots connected to produce a continuous chart. The line between the values of 0.04 and 0.05 represents the hypothetical boundary between the perception of given (0.05+) and new (0.01-0.04).

One of the most encouraging aspects of the analysis is the high degree of coincidence between 'given' and 'theme' in both the Systemic-functional and Prague School senses of the term. Where such a theme (in the Systemic-functional sense) is not 'given', as in the case of 'a boy' (line 3), the indefinite article confirms the computer analysis, and Communicative dynamism would classify as Phenomenon and rheme. Another such instance is 'The brown blotches of the benevolent skin cancer the sun brings from its reflection on the tropic sea' in ¶ 2.

Obvious errors are the high value assigned to '(an) old man' in the first sentence and the low values assigned to 'hands' in the 3rd sentence of ¶ 2 and perhaps to 'parents' in the 3rd sentence of ¶ 1. The status of given is thus assigned or unassigned erroneously in 3 instances, comparable with a total of 61

*Figure 3: ranges of average givenness in ¶¶ 1-3*

```
Text10x30x.out ASCIT4X/GRAPH8 SPAN = 30 FOCUS = 100 CPU 18' REAL 53'
EXPONENTIAL FOCUS = 2 SEPTEMBER 22, 1993
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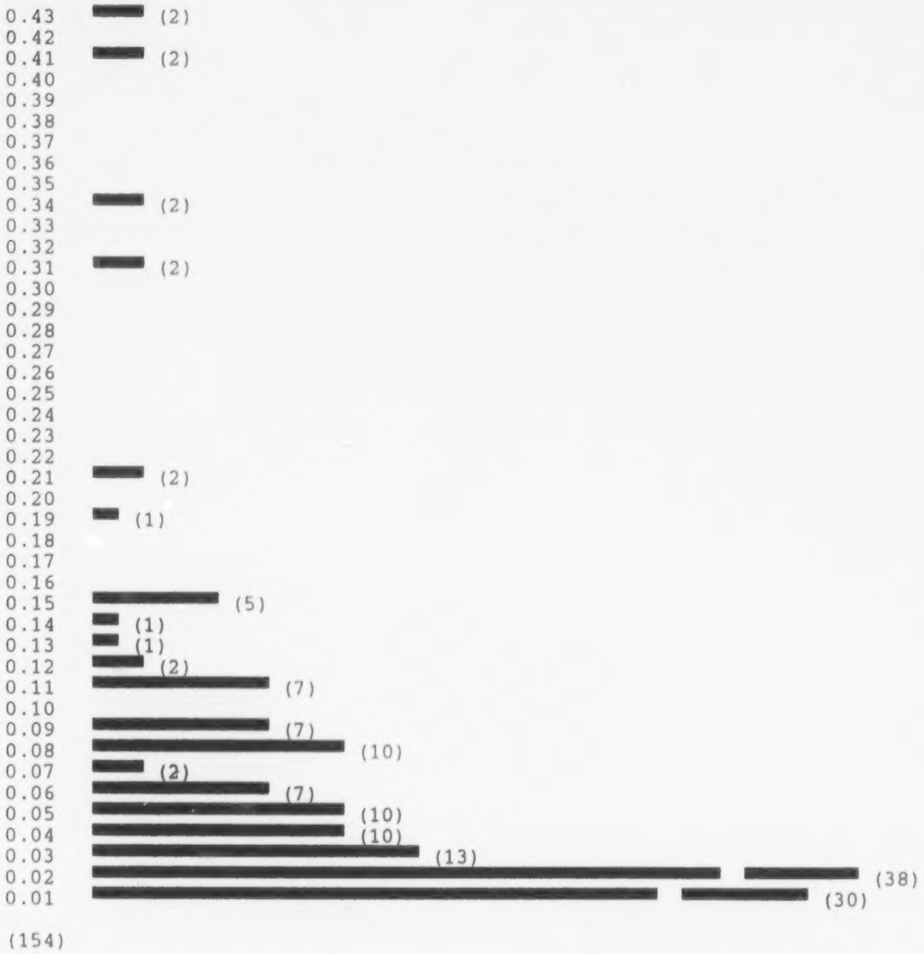

credible given items. Despite this rate of error of 5%, the wave-shape alternation between given in the theme and new in the rheme comes through, with given returning early in clauses which require marked information structure. Not a single tonic placement suggested by the analysis is wholly counter-intuitive, although I would sometimes have preferred a different distribution, e.g., on 'fish' (line 3) instead of 'take', (since 'a fish' in context means 'a single fish', with implied 'single' both new and salient) and on 'three' four lines later instead of on 'good' (since the main contrast appears to be between no fish and some fish).

The errors can be usefully criticized by an application of FSP principles. Both 'parents' and 'hands' have the semantic role Quality Bearer, which is given

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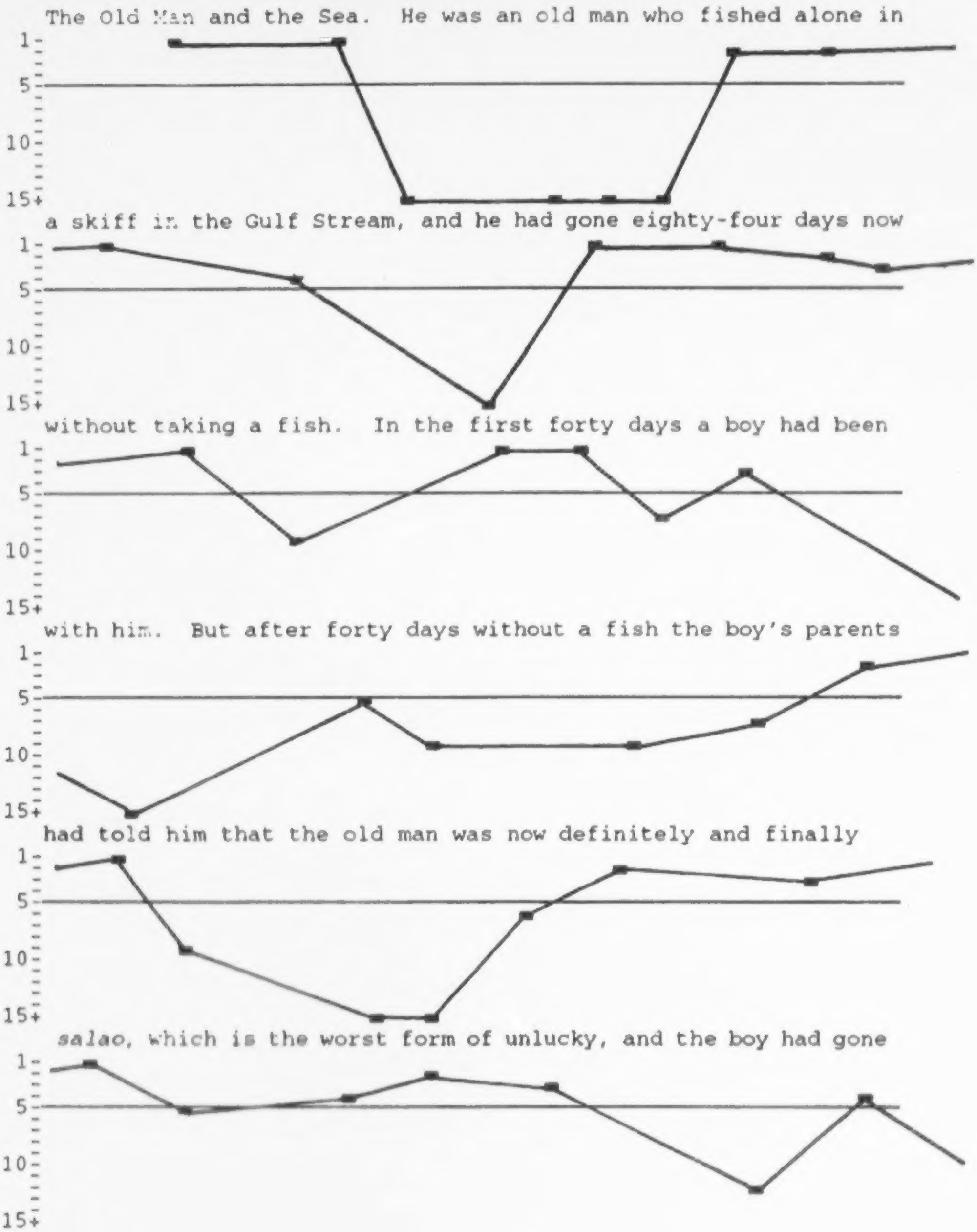
and thematic by contrast with Quality ('told', 'had'). More interesting is the status of 'an old man' (sentence 1), which is the Quality, and therefore new information and rheme to the given and thematic subject 'he' of the clause.

Many of the issues which this procedure raises relate to the representation of the cohesion implicit in the lexical semantics of a text by means of a costed graph. The inclusiveness of the graph almost always exceeds the inclusiveness of the span, which raises the question of how the size of the graph bears on the accuracy of the analysis. The nodes in the graphs at the present stage are formal lexical items, which raises the question of the possible effect of representing both the input text and the graph as collections of componential features. These and many other such questions would appear to have answers ultimately obtainable only by further experimentation.

*Figure 4: curve of semantic connexity in ¶¶ 1-3*



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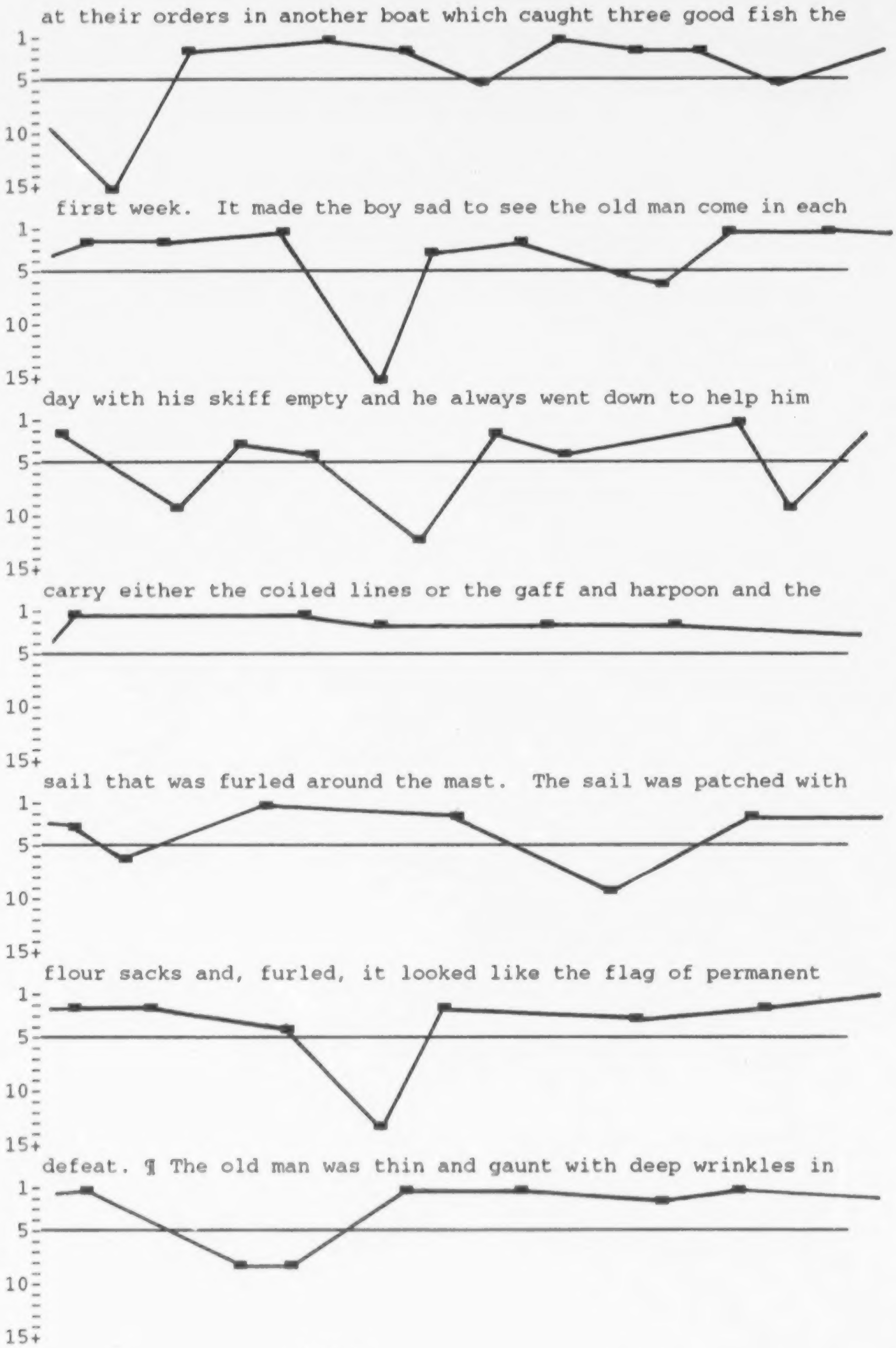
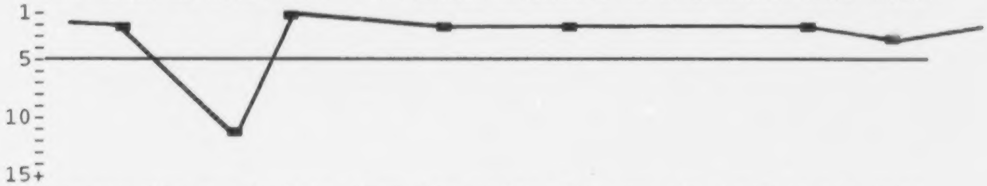
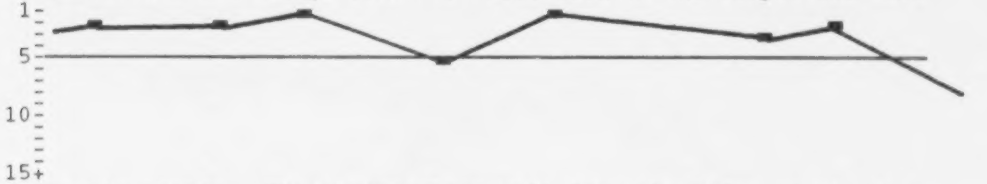

at their orders in another boat which caught three good fish the
first week. It made the boy sad to see the old man come in each
day with his skiff empty and he always went down to help him
carry either the coiled lines or the gaff and harpoon and the
sail that was furled around the mast. The sail was patched with
flour sacks and, furled, it looked like the flag of permanent
defeat. ¶ The old man was thin and gaunt with deep wrinkles in
1
5
10
15+

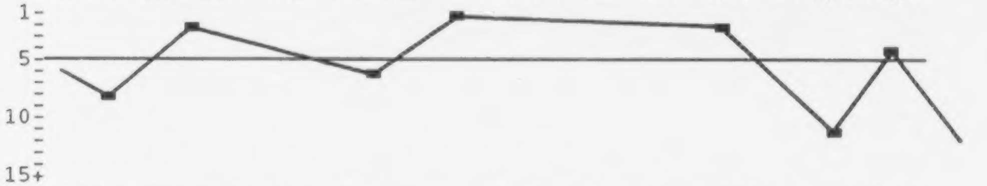
the back of his neck. The brown blotches of the benevolent skin



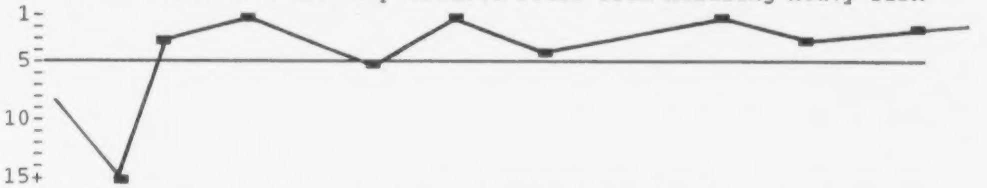
cancer the sun brings from its reflection on the tropic sea were



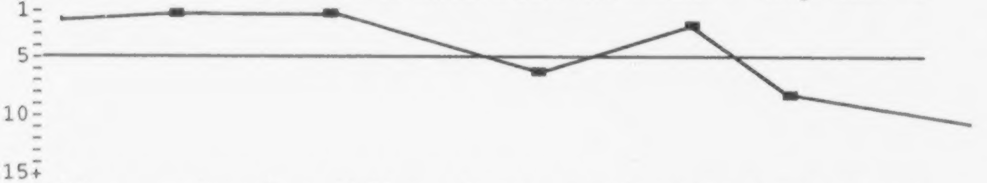
on his cheeks. The blotches ran well down the sides of his face



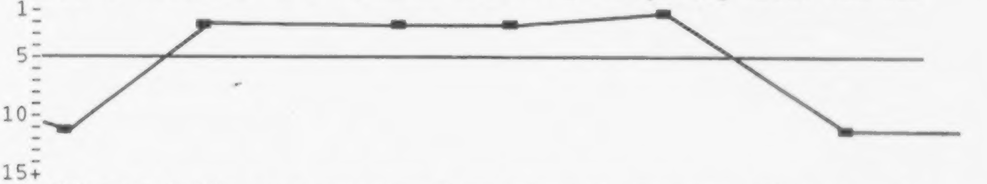
and his hands had the deep-creased scars from handling heavy fish



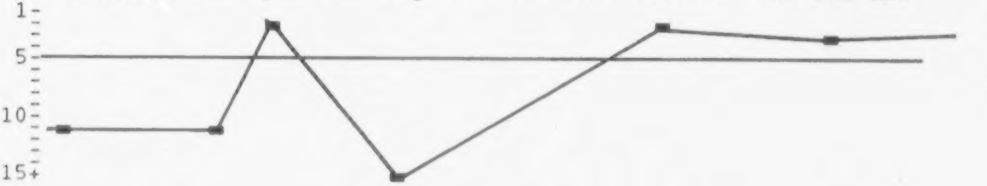
on the cords. But none of these scars were fresh. They were as



old as erosions in a fishless desert. ¶ Everything about him was



old except his eyes and they were the same color as the sea and



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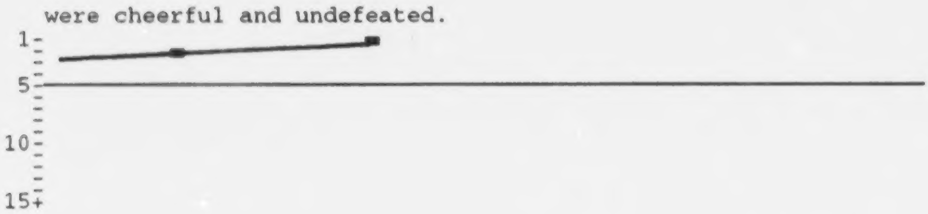

## NOTES

1. Earlier treatments of this material, based on an earlier form of the experiment, were presented at the 20th International Systemic-functional Congress, University of Victoria, Victoria, B.C., July 19, 1993 and the 5th Nottingham International Systemic Workshop, University of Madrid, Spain, July 28, 1993.

2. Unless otherwise labelled, the terms 'theme' and 'rheme' herein refer to the theme/rheme distinction as defined by the Prague School. When the reference is to the very different theme/rheme distinction defined in Systemic-functional linguistics, it will be labelled as such. Systemic-functional linguistics carefully differentiates theme from given, and rheme from new, and offers a radically different interpretation of how they are realized (Halliday, 1985:38ff.; Fries 1983:136ff.).

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# BUILDING BRIDGES BETWEEN PEOPLE, LANGUAGES AND CULTURES

Iain MacLeod
formerly of George Watson's College, Edinburgh

My interest in language as an object of study was generated early in my life at school, when I asked my Latin teacher to take me privately for Greek, because the school no longer offered the subject in its curriculum. Profound as the impact of my old teacher was, it had to counter an even more profound desire to be involved with literature. I wanted to write poetry. Eventually, circumstances beyond my control played a decisive role in frustrating and moulding these twin interests in a way that I could not have foreseen. I was born in Hungary, and into circumstances which should have provided ample material for a writer and artist, but at that time - during the worst of Stalinist Communism - I was not allowed the forum in which to find and to give expression to my voice as a poet. My verbal dexterity, however, was recognised, and I was given plenty of work - to translate poetry. I suppose the motivation was partly benevolent, for it kept me alive in more ways than one, but the work of translation took up so much time beside my university commitments, that I could not easily indulge in the allegedly "decadent and bourgeois pastime" - of writing poetry of my own. However, I had a certain freedom in my choice of material to be translated. This gave me a chance to express ideas that I would not have been permitted to publish as my original work under a Communist regime. Now, if you balance this marginal freedom of choice against the restrictions on my own work, you will see how circumstances have predestined me to become a translator of poetry.

What I am going to tell you about today is not the result of any formal study of translation theory - of which I have done very little. Neither am I going to present my lecture as some "distillation of practical experience". I am going to approach my subject-matter very informally, almost humbly, despite the warning of a scholarly friend in Britain who said: "Do not understate your work in North America: they will believe you". Heedless of his advice, I am going to tell you simply about the problems, ideas and some of the tentative solutions I have come across through the decades I spent transplanting works of literature from one language into another, from one national, social and cultural tradition into another. And I shall leave you with the question whether this process of building bridges between people, languages and cultures can be properly described as translation, or do we have to find a new name for it? Conscious of this problem, I called my rendering of "The Tragedy of Man" by the Hungarian author, Imre Madach, a "Translation and Adaptation" - anticipating some criticism of infidelity. In the end, those who wanted to publish my work bi-lingually thought it was closer to the original than any of the earlier translations; others believed that I had taken on my shoulders too much responsibility; others again considered it an improvement on the original.

Since the name of Imre Madach or "The Tragedy of Man" may not be familiar to some of you, a few introductory words would be in order. Imre Madach was born in 1823 and died in 1864. He was a Hungarian aristocrat and landowner, who nevertheless held various public offices as a Deputy Notary and a County Court Judge, and was eventually elected as a Member of the Hungarian Parliament. He wrote a number of plays, poems, essays and articles, but his sole claim to international fame as a poet rests on his ambitious philosophical, dramatic poem of 4117 verse lines, "The Tragedy of Man". It was first published in 1862.

Madach's work is certainly one of the greatest literary compositions ever written in Hungarian. It has reportedly been translated into more than thirty languages, with eight published translations in English, and some still in manuscript. The original publication of "The Tragedy of Man" in 1862 was received with the highest acclaim, and admiring critics have compared it favourably to the works of Goethe, Dante and Milton. An abbreviated stage version of "The Tragedy of Man" was first performed in 1883 by the Hungarian National Theatre, Budapest, where it has seen over 1400 productions during the last 110 years. My English version was published in 1993 by Canongate Press, Edinburgh.

"The Tragedy of Man" is essentially a morality play of fifteen self-contained scenes in which the protagonist, Adam, having left the Garden of Eden, is shown the future of mankind, even to the decline of the planet Earth. The pageantry of the successive scenes through history and beyond is stage-managed by Lucifer whose choice of incidents in the course of the play is designed to drive Man to despair. In the final scene he almost succeeds in persuading Adam to commit suicide in order to prevent the disastrous history of mankind unfolding, when the timely announcement of Eve that she is pregnant causes Adam to reject Lucifer's guidance and to surrender to divine providence.

So much about "The Tragedy of Man" in brief. Towards the end of my lecture I shall refer to some features of its English version in my rendering, which in turn are illustrated by a few excerpts in your notes. You will find that the notes can be studied independently at your leisure after the lecture.

Early in my twenties, when I worked with actors rehearsing and broadcasting on radio, I was often struck by the discrepancy between the text as I imagined it in the process of writing, and the way the same text was interpreted by well-respected, professional actors and actresses. In view of the sheer number of these experiences with different actors, and in view of their professional reputation, I first suspected that this divergence of interpretation was due to my own - possibly slack - writing. I was still learning my trade, and my late editor and friend, Janos Viktor, whom I must name here by way of homage to the master, told me on one occasion: "Remember, the listener cannot turn back the page." Indeed, I embraced this remark and I have striven for clarity of expression all my life thereafter. Nevertheless, it continued to puzzle me why experienced actors should want to read my text in a way different from the blueprint I had in my mind, and why their own interpretations differed from one another, and yet why they were in most cases quite happy to go along with my interpretation - if so instructed. Now, it did not escape me that different actors' rendering of the work of other writers showed much the same variation, but at first I did not draw the obvious inference: the possibility of different interpretation by different individuals - owing to the inherent inexactitude of the written word.

It surprised me also how much gesture and body-language actors use in a radio recording, when these cannot possibly be seen by the listeners. Some of these were clearly intended to influence the quality and the tone of the voice. We know, for instance, that any word pronounced with a smiling face or a grim face is bound to sound different, owing to the different relative position of the oral apparatus. The smiling "yes" is more frontal at a higher pitch, the grim "yes" is produced further back in the mouth and at a lower pitch, the resultant growl suggesting in fact the possibility of the very opposite intention, that is "no". Facial expression, quality of tone, together with intonation and possibly accent, can give the spoken word an extra range of meaning unaccounted for in the dictionary.

However, I found that my actors used far more body-language in their sound recordings than might have seemed necessary from the point of view of mere sound production - in so far as I could consciously account for it. When I asked them about this over a cup of coffee, they would say it helped them to feel the part better, but I had a feeling that there was more to this body-language than actors themselves realised. It would be interesting to conduct an investigation of audio recordings with and without body-language, to see if body-language has any aural input into the sound pattern, an input that is not consciously discernible to the ear, but which could be demonstrated on an instrument like an oscilloscope. Evidence for this super-sensory communication may well be tangibly available.

Be that as it may, a basic skill to enhance the plain word with this non-verbal communication is learned with the mother tongue. Some are more gifted than others, but everyone can develop the skill, and a number of people ought to do so. I am sure we have all heard fluent but monotonous lecturers reading their papers with expressionless faces. How much more effort is needed to follow such a reading! The flaw is in the delivery. Apparently, our brain in the "reading mode" can superimpose on the written text features of non-verbal communication that in the "listening mode" it expects to receive from the reader. I am sure this is why some people, actors in particular, use body-language to help them recall vast amounts of text instantly. Ask any actor to recite a few lines from a play or a poem, and he will deliver the lines while producing some kind of gesture. Very often the gesture begins before the actual words are recalled, as if the actor tried to ease out the words memorised with it. The spoken word and body-language are two sides of the same communication system, forming a joint verbal and non-verbal communication system that we use in everyday life. Strangely, and regrettably, the latter has not received adequate attention by linguists, or at least their findings have not percolated down to general education.

The desire to communicate is inherent in the human psyche, as it was probably present in pre-human forms of life, as much as it is present in certain gregarious sub-human forms, animals and even insects. Body-language therefore preceded verbal communication, and as the latter developed through the millenia, the two became inseparable - although verbal communication has become dominant. Indeed, our formal education tends to put too much, if not exclusive emphasis on verbal skills to such an extent, that we find highly articulate, erudite people who cannot readily make contact: professors who cannot teach and partners with PhD-s who make each other's life unbearable. For all their erudition they use the inappropriate non-verbal language.

Yet, a potential for non-verbal communication is present in all healthy individuals, and given sympathetic treatment, by which I mean a balanced education, the latent skills of non-verbal communication can be "brought out". That I believe is the purpose, and indeed the meaning of education: not so much to impose, but to bring out. In order to balance the input of our overwhelmingly verbal education system, I take every opportunity to recommend the introduction of Drama Education at all levels of Primary and Secondary curricula. I know that to some people I begin to appear like a latterday Cato, making this recommendation at every opportunity. Ceterum censeo, however, not the destruction of Carthage, but the building of bridges across the stretches of water, the gulf that separates people, languages, civilisations and cultures. I see this process of building bridges by means of improved communication not merely as an abstract, aesthetic goal. It is more than a moral and indeed religious objective. The increase of the world's population against the limited amount of living space available on the globe, with finite resources, makes the improvement of communication a practical necessity. The alternative is unthinkable. This drive for improved communication cannot wait for political decision; it cannot be left to the forces of economics and commerce. It must begin with language and the sharing of our respective cultural heritage. Language must not be allowed to remain a barrier between human beings.

I taught English language and literature for over 25 years, and I have found both disciplines eminently suitable for building bridges and removing barriers at all levels. I set out to help my students to understand themselves, and in that process I know I usurped on one occasion at least the role of a marriage guidance counsellor! One of my female students came to me with her husband, whom I had not known, to thank me for their reconciliation. Apparently she found our discussions on Arthur Miller's "Crucible" helpful and revealing in their own troubled relationship. She quoted me chapter and verse from Act Four, concluding with the words: "Suspicion kissed you when I did; I never knew how I should say my love. It were a cold house I kept." I think this example splendidly illustrates the role of verbal and non-verbal communication in human relationships.

I said a few minutes ago that the desire to communicate is inherent in the human psyche. Now I should like to take this a stage further. I have reason to believe that the non-verbal skills to communicate are also present in our subconscious and can be released by circumstances. I saw this controlled release taking place in the course of preparing stage-productions with my student actors. A few questions were the only guidance my students needed to gain an instinctive insight into characters and human behaviour patterns far ahead of their physical age. Watching them often made me think that we were ALL drawing on a collective, sub-conscious pool of human experience in our effort to communicate.

I also mentioned earlier the word "accent", and before I continue my line of argument towards the problem of translating multi-levelled human communication, I should like to say a few words on this aspect of the spoken word. I assume that the significance attributed to accent varies in different societies and countries, and I have not been in North America often enough and for long enough to assess the significance of accent in Canada and the USA. On the other hand, I know that accent is the unprinted visiting card in Britain. Open your mouth, and I can tell your social, educational background. Please note that I am not taking about foreign accents, which Britons may regard as being "cute", or something less flattering: my concern here is with regional accents and more importantly with accents associated with social status.

It is common knowledge that people in Britain who have not already acquired a Public School English in their primary and secondary education, having been educated in those establishments, shed their native and regional accents at some of our top universities and cultivate Received Pronunciation as a matter of course. This acquired accent commands respect, as illustrated by the following incident.

One day I was out walking in the Scottish Lowlands with a colleague who was, please note, of Austrian, that is of Central European descent, but who spoke with an impeccable Oxbridge accent. At one point we were stopped by a Scottish bailiff, because quite a few landlords nowadays do not recognise walkers' right of access on their estates. My colleague said he would settle the disagreement in his own way, and had I not realised the historic injustice of the situation, I could have laughed at what followed. No sooner did the bailiff hear the "superior" accent he associated with his possibly Public School-educated landowner and his guests coming to shoot on the estate, than he literally took off his bonnet and apologised, saying that he was only "tryin tae dae his job", having been told to move the trespassing hillwalkers off the estate.

I mentioned a minute ago that I saw in this incident a historic injustice, whatever else you and I may also see in it, and I think a little background information is called for, hoping that those of you who are familiar with the story will bear with me. It is going to be the merest outline, but it will have a bearing on what follows later. The bailiff's ancestors south of the Highland line, and certainly south of the Clyde and Forth valley in Central Scotland, probably spoke Lallan Scots for centuries after the demise of the Celtic Gaelic in the Scottish Royal Court and the introduction of the Saxon Scots as the official language of the Kingdom of Scotland. The changeover obviously took a considerable time, and I use reference to the Scottish Royal Court only as a marker. During the greatest extent of the Kingdom of Gaelic Scotland, the areas south of the modern Glasgow and Edinburgh had spoken a form of Celtic related to modern Welsh, but Gaelic is considered to have been understood throughout the Kingdom, a kind of lingua franca, down to modern day Cumbria, including the Lake District in the north-west of England. What I am trying to establish is that Scotland had had languages of its own, first Gaelic, then a variety of northern Saxon, occasionally referred to as English, but more and more frequently described as Scots, as being different from, although related to that southern language. In the 16th century the Calvinist John Knox introduced an English translation of the Bible, the Authorised Version, for use in schools in all the parishes of Scotland. This in due course - to cut a long story short - led to the gradual suppression of the Scottish Vernacular throughout the Lowlands, so much so, that in my lifetime I have seen Scottish children punished or at least told off for using the Scots Vernacular in preference to English - albeit with a Scottish accent. The language of our neighbours was deemed to be a superior language, and through the centuries it did become superior, as the independent language of Scotland was demoted in the public eye to be a mere dialect, spoken by the least educated classes who could in no way develop it to keep pace with her sister language. This state of affairs is demonstrated by the bailiff's reaction to my colleague's English accent. It is only since the modern Scottish Revival that Scots has become a respectable language again, fit to be the medium of works of literature.

I have given you a brief historic perspective of accent - certainly from the Scottish point of view - partly to explain why I have not chosen to speak the kind of English you might have expected of me, but mainly to illustrate that accent has deep and historic undertones in Britain which amounts to an added field of meaning of any word written in the corpus of British literature. I wonder, for instance, how a translator of Walter Scott could handle the three languages in some of the Waverley Novels - English, Lallan Scots and Gaelic - without making the speakers of the last two appear uncultured, uncivilised vagabonds, which was certainly not Walter Scott's intention.

As we have seen, the dictionary does not help with the variations of meaning imparted to words by accent, intonation, pitch, tone and body-language. Nor does it help with the associations any word or expression may conjure up in the mind. The word "dog", Canis Familiaris, for instance, does not signify the same concept to a desert Arab, to a North American Indian and to a dear old lady living in a London suburb. What may be a filthy scavenger to an Arab, is an asset to the Indian, on which his survival may depend, whereas to the lady the dog may be a friend, almost a member of her family. Consequently, we may be justified in saying that the Arab's dog is the Indian's coyote, and the Lady's jackal perhaps. The Indian's dog is the Arab's camel or Land Rover, and the lady's taxi. The lady's dog is perhaps the Arab's horse and the Indian's newly wedded wife. This is perhaps an extreme example, in the form of a caricature, but it illustrates the point: a figure of speech involving the word "dog" in any of the three languages concerned is bound to fall on deaf ears with speakers of the other two languages.

Littera scripta manent - we read in our Latin school books, and indeed many of the writings of ancient civilisations are still with us. However, the question also remains: "What precisely the ancient writers had in mind in the act of writing?" We cannot agree on the interpretation even of our own contemporaries! Literary convention has taught us to accept the interpretation of classical authors by certain recognised scholars, but can their interpretation be the Gospel truth as we have been led to believe? Indeed, is Holy Writ itself not open to ever so many interpretations? And bearing in mind that the very words of a piece of written work have in themselves different associations to people in different walks of life and in different civilisations, and that the meaning of each word is subject to modulations by accent, intonation, pitch, tone and the whole gamut of body-language as soon as they are given utterance, it seems truly amazing that we understand each other as much as we do. Each one of us is unique, as much as our fingerprints are exclusive to ourselves. Our written or spoken communication is sifted through our unique set of filters and receptors built from earlier experiences, and the message received therefore is bound to be different, however slightly, from the message transmitted.

In this respect the person who undertakes the translation of a work of literature is no different from the reader. Like the reader, the translator has to work within the parameters of his or her comprehension. One can translate as much as one understands. However, comprehension can be enhanced by a conscious effort to identify with the author's viewpoint. I do not mean one should imagine that one is the author. I mean a deliberate immersion in the author's world (I am tempted to use the word "consciousness"); an immersion through prolonged and detailed study of the author's life, his social, cultural and in so far as it is possible, physical environment, sources of influence and information, to the point when one is confident that one could ACT the character of the author, as it were, in a play - with all the body-language that it involves. No hack translator could make a living out of this. What arrogance could assume that one could "knock-off" in their dozens translations of major works of literature that had taken years or part of a lifetime to create?

At the risk of inviting disbelief I am bound to say that my work on the latest rendering of "The Tragedy of Man" by Imre Madach amounted to nothing less that the process I have described.

A work of art, a piece of literature, however universal its theme, however relevent to all times, is UNIQUE - as much as the author and the time of composition also are unique. A piece of literature cannot be translated, if by translation we mean mirror-copy translation. As it stands, it speaks principally to the original readership and to the original spectators, and it is not until certain allowances are made for its component features that it can release some of its riches to posterity. It takes a great amount of skill on the part of a theatrical company, and a great amount of effort on the part of the spectators themselves to overcome the unfamiliar idiom, for instance in Shakespeare's language, before it registers as enjoyable, and even then, if truth be told, only to a minority of the population. Without the back-up of stagecraft and the full measure of the actors' body-language, the work of Shakespeare is no easy reading, as those of us who have taught Shakespeare for decades testify. A piece of literature, however, can be re-created in another language, and this is where the preparation for the work I described earlier can make a great difference. It gives one the confidence to handle the subject-matter boldly - as the author would have done, given hindsight and the new language. One can boldly abandon verbatim translation, only to get nearer to the intended meaning. One need not worry about imagery, if another set of imagery serves the author's purpose in another language. This is the "unfaithful fidelity" of the translator that one of my reviewers cited appropriately from Janos Arany, an author of wonderful Hungarian versions of Shakespeare, and this is why he considered that my English-speaking readers and spectators were in an enviable position: they could enjoy a modern Madach, whereas the Hungarians have to contend with problems not unlike the ones Shakespeare's spectators encounter today in the original English.

Let me now in the rest of my lecture consider certain features of translation with this "unfaithful fidelity" in mind, using my rendering of "The Tragedy of Man" for reference. Please note that my observations apply to works of fine literature in the strictest sense, to poetry, drama and prose, whatever bearing they may have on other forms of prose, from scientific dissertations to recipes.

First of all, one has to abandon the mistaken assumption that a major work of a great master is ipso facto perfect through and through, and that the author would not want to alter an iota of it, given the chance. I shall not show discourtesy to famous names of literature by listing examples of their lines which would not have stood the test of time, had they not been incorporated in recognised masterpieces, or had they been written by less illustrious authors. We know them and we ignore them in deference to the master. Such weak links can be due to poetic, artistic lapses, and it would do little honour to authors if they were to be perpetuated in translation - even if they can be translated at all. (Nonsense, as you know, is the most confounded thing to translate.)

(Do I detect a few question marks on your faces? I should perhaps quote, after all, and with the greatest respect to the author, the famous lines: "To be, or not to be: that is the question. / Whether 'tis nobler in the mind to suffer / the slings and arrows of outrageous fortune, / or to take arms against the sea of troubles..." Or would it not have been more appropriate to build dikes against the sea? Had the bard written this figure of speech while he was a pupil at grammar school, no doubt he would have been told: "Billy you've got a mixed metaphor there".)

Other forms of imperfection that occur are simply due to the passage of time: with hindsight we know better; but again it would seem to be wrong deliberately to highlight mistaken or outmoded pieces of information in a translation, IF they could be avoided without detriment to the work. It would be a case of misguided deference to the author, or to philological fidelity, when it is indeed possible to render due deference to both. The enlightened translator can meet the requirements of artistic and philological purity by relegating the verbatim translation to the notes, and presenting the translation as an up-to-date memorial to the author whose learning and information at the time of writing could have been without a peer. Before you jump on your feet in indignation, accusing me that I would re-write "The Tempest" or "Peer Gynt" and even "The Divine Comedy" itself as so many pieces of unlikely story, let me "temper your judgement with discretion": for it is with discretion that I propose to treat this very difficult subject. Let me illustrate my point with my treatment of "The Tragedy of Man".

Imre Madach had an immense wealth of up-to-date information, as my Notes in the volume testify. Writing in 1859 to 1860, he embraced the cosmology of Rudolf Clausius, who less than ten years earlier had put forward the second law of thermodynamics, according to which the universe would lose energy at an accelerating rate, and - to put it briefly - the earth would freeze. Madach incorporated this now outdated cosmology into the very fabric of his work: the story is told in these terms, but I had no reason to alter it. Madach did not set out to write the "History of Man, Past, Present and Future", as I said in the Notes on my text. Adam's dream of the future of Man was stage-managed by Lucifer whose objective was to drive Man to despair, and to that end Lucifer presented a credible but false picture of Man's future. Clausius' cosmology therefore fits. On the other hand, certain detail, examples of which are listed in your notes, had to be changed in order to maintain credibility, for it would have jarred on the ears of today's readers and spectators. What was clearly an embellishment in the late 19th century, would have been an unsightly tarnish in a modern English version. The Earth is unmistakably blue and white from space, not green and white; the history of mankind is measured in terms of millions of years, not thousands of years; aluminium is not a newly discovered metal, etc. etc.

A translation of a piece of literature is not intended to replace the unique original. That cannot be done, as we have seen. A serious student of Madach has to read his work in Hungarian. My version of "The Tragedy of Man" set out to re-create the great drama in English - for the contemporary reader and spectator. My intention was to make an impact today similar to the impact the work made in the 19th century. Although Madach did not write his dramatic poem for the stage, nor could he have expected it to appear on the stage, he conceived it in terms of the stage - as he knew it. Consequently, my version is also conceived in terms of the stage - as I know it. Knowing - with hindsight - the practical problems of its production on the stage, I had to make certain alterations to the text to anticipate its production in English. This is where my experience with stage production came into its own, as you will see. I have altered some of the stage directions, giving a verbatim translation of the original ones in the Notes. Against the uniform poetic style of Madach, I introduced a multi-layered style of dialogue to suit the hundred or so characters in the play, drawing from idiomatic, spoken English, which gives way every now and again to heightened, poetic language in lyrical, narrative or descriptive moments. I have made allowances for Madach's sense of 19th century propriety and manners which would have rendered his witty remarks dull and humourless to 20th century ears, while on the other hand I had to tone down his more sanguine, Hungarian turns of phrase and Romantic imagery which would have sounded crude or alien to readers of the English version. In keeping with Madach's declared ambition not to leave the world anything mediocre, I have endeavoured to smooth out the prosody of "The Tragedy of Man" in translation, whilst keeping to Madach's original metre, and to eliminate a few remaining obscure turns of phrase which I am sure he would have done in due course, had he lived longer. And, most importantly, I have built into the text an implied body-language in anticipation of its stage-production. The whole text of "The Tragedy of Man" has been READ OUT and ACTED OUT line by line, over and over again, throughout the extensive period of its final polishing.

As I said earlier, I called my version of "The Tragedy of Man" a translation and adaptation, because I thought that many people would consider it to be somewhat removed from the traditional idea of word for word, line for line translation. Seven translators have failed in the course of a hundred years to produce a convincing English version, working along those lines. I tried it myself in earlier drafts and I found that a straightforward translation does not work, at least as far as "The Tragedy of Man" is concerned. At its best, it can attempt to report what Madach is trying to say, without actually saying it. I am assured that compared with the best translations of foreign classics, my text reads like a piece of original work drawn from the very essence of English idiom, and if those commentators are right, the present English version of "The Tragedy of Man" may well point the way to future translations. From this remark you may gather, that I have, after all, taken the advice of my scholarly friend back in Britain: I have not understated the significance of my work.

## NOTES

The lecture "Building Bridges between People, Languages and Cultures" draws on Iain MacLeod's experience of working with professional and student actors, on 25 years of teaching English literature in Britain, and on several decades of practice as a translator of poetry and drama. Special reference is made to his work on "The Tragedy of Man", a dramatic poem by the Hungarian poet, Imre Madach, first published in 1862. Iain MacLeod's translation and adaptation was published in April, 1993, by Canongate Press, Edinburgh, Scotland. (ISBN 0862414180)

Earlier Published Translations of "The Tragedy of Man":

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|---|---|---|
| W.N. Loew | New York | 1909 |
| C.P. Sanger | London | 1933 |
| C.H. Meltzer & P. Vajda: | Budapest | 1933, 1963 |
| J.C.W. Horne | Budapest | 1963 reprinted several times |
| J. Grosz | Portland, Oregon | 1965 |
| | Budapest | 1985 |
| G. Szirtes | Budapest | 1988 |
| T. Mark | New York | 1989 |

A few examples of Iain MacLeod's new approach to translation follow: deviations from the words of the original text in order to get nearer to the meaning. Such alterations are also accounted for, or explained, with the passages translated verbatim in the "Notes" section of the volume.

(A) The Problem of Style

Madach does not differentiate between the social background of characters as far as their style and vocabulary are concerned. In modern English, especially on the stage, this would not have sounded convincing. Occasionally, a few words (underlined) had to be added to the original text either to help with characterisation, or to overcome the difficulty of the character - in this case a man from the Athenian mob - having to use words which would not have been seen as part of his normal vocabulary. Such "alien" words would also be italicised in print to draw attention to this.

Man: The place is dead, not like in days, remember,
when folk had, what d'you call them, propositions
to put before us, and to - ratify them
the sovereign people's throat was called upon.

Despite Madach's uniform style, the modern English text must allow for the different speech patterns of the freed slave and the wealthy citizen of Athens.

Eve: You, Crispos, there! My husband made you a freeman,
and you would want to see him put to death?
Crispos: I'm sorry, Lady. It's his life or mine.
That's how it lies. I've got a wife and children,
and this man's bought my vote.
Eve: I pity you,
being so debased by fate, you cannot help it,
and your excuse, perhaps, is that you starve.
But what of you, Thersites, you and you?
You live in plenty now, you can relax...
Thersites: I must admit, Madam, we do not like this.
What's to be done? Such is the people's mood...
No one's prepared to risk his property
in rash defiance of that raging torrent.

Eve, the sister of a Marquis during the French Revolution, with whom Danton falls in love at first sight and who declines his proffered love, and Eve, the common woman in rags from the Paris mob, who in turn lusts for Danton, do not speak the same language in the modern English version.

Eve: It's seemly to attend with reverence
the sanctuaries of the past in ruin,
more suited to the woman's frame of mind
than adulation of rebellious power.

Eve: Upon my word, you talk as if you was
a blue-blooded aristocrat yourself!
You talk of love, citizen? Stuff for stories.
Have it like this: I'm young and I'm a woman;
I fancy you're a great man, so - I want you.

Verbatim: "Indeed, citizen, you seem to have become one of those blue-blooded aristocrats, or you must be delirious when you talk in this romantic fashion. You are a man, I am a young woman. My admiration brings me to you, great man.

Lucifer uses affected upper-class accent to persuade people at a 19th century London fair that Adam is a rich aristocrat in disguise. The reader's attention is drawn to the appropriate accent by "India-h".

Lucifer: You see, my lord, it's inconvenient
trying to keep up your incognito:
you're bound to suffer insults now and then.
If people knew you had four merchant vessels
about to dock today from India-h,
reception would be different.

(B) The Problem of Information Available in the 19th Century

Madach's up-to-date information on the spectrum of 19th century learning was an asset to his work at the time of writing. References to such information, however, had to be removed, for they would have dated the modern English text. The following examples show that this could be done without appreciable loss. Thanks to space photography, we know that the globe looks blue and white, and not green and white, from a distance, and the sea, instead of being a grey patch as seen from space, merges in "radiant blue".

Angels: Come, you gracious, youthful spirit,
with your globe forever changing,
on whose cloak of light and darkness
white and blue are alternating.

Adam: The thunder-bearing clouds the villager
would view aloft with superstitious awe
appeared a puff of vapour round the globe
on which the seeming endless, restless ocean
itself was lost and merged in radiant blue.

Human beings have existed on the globe for millions of years, and not for six thousand years only. Lucifer refers to a puppet-show featuring the Eden event.

Lucifer: How flattering - a lead part in the show
which has a run of millions of years
and still can entertain the populace.

While the disaster scenario of the second law of thermodynamics is acceptable for the purposes of the plot, Adam's dream having been stage-managed by Lucifer with a view to driving him to despair, Clausius' proposed time scale of the globe freezing in four thousand years need not be spelled out on two occasions. "In time" or "in a given time" not only remove the jarring inaccuracy, they may add to the impending menace of disaster.

Scientist: We know, in time the sun will loose its heat
and no plant-life will germinate on earth.

Lucifer: Have you forgotten that prognostication?
Science forecasts that in a given time
your globe will freeze - and then the battle's over.

Madach refers to aluminium first introduced to the public in 1855, four years before he started "The Tragedy of Man". Such reminders of its date of composition can be removed without any harm to the overall effect.

Scientist: and this, the metal iron,
was much in use until supplies exhausted
man had to search for metals yet unknown.

19th century scientific speculations on alternative sources of energy being "extracted from the air" can also be removed by less specific reference to resources.

Scientist: This is a lump of coal.
There used to be great mountains of the substance
when man had energy, as it were, ready made,
and did not have to draw on other sources
as we do now.

The process of "updating" Madach is not restricted to correcting dated pieces of information. Every opportunity is taken to use imagery that has meaningful echoes in the modern ear. In the Brave New World scene a Scientist points out a few antiques of history - like a field gun. It has a Latin inscription: ULTIMA RATIO REGUM.

Scientist: Antiques, some of them most peculiar,
like this gun here. It bears a strange inscription:
THE ULTIMATE DETERRENT. No one knows
how it would work. We know this sword, however,
reserved exclusively for taking lives.
Killing with this was not considered murder.

In outer space Adam's body freezes solid. Lucifer tosses away the lifeless hulk, saying: "And this sham-deity can go into orbit in space, like a new planet, on which new (form of) life might evolve for me."

Lucifer: Come on, you puppet-deity, there's your orbit!
A new planet, a man-made-satellite,
I might evolve some form of life upon you.

Madach stipulates in the stage directions that Lucifer is amused by Adam's predicament, but Lucifer's sardonic humour is much enhanced in the English version by the careful timing and intonation of "man-made-satellite" - the double meaning intimated by hyphenation.

### (C) The Problem of 19th Century Taboos, Manners, Sanguine and Romantic Imagery

Madach's 19th century sense of propriety would not have permitted the stronger language necessary to achieve a commensurate touch of humour in one of his jokes reconstructed in modern English. However, he went as far as he could. "The present never invites respect. Like human greatness in the bedroom. It is our wife after ten years of marriage - we know full well how many freckles she has." Lucifer's down-to-earth language reflects the boldness of Madach's humour - now expressed in late 20th century terms.

Lucifer: The present never seems to flatter us.
It's like our bedroom: cuts us down to size.
Or if you please, our wife, past ten years' marriage:
we've counted every pimple on her arse.

When Madach's sense of propriety combines with his naive ignorance of the seemy side of life, he is very unconvincing even in Hungarian. Adam-Miltiades urges his wife to abandon virtue. "You are a fool, you deserve to be ridiculed by the girl who with her painted face sits in the brothel, with lips longing for a kiss, aroused with wine."

Adam: You'll be a fool, the laughing stock of whores
with painted faces and their lewd attire
waiting outside the brothel for the guest...

Other 19th century features, posturing (especially when addressing women), Romantic and sanguine turns of phrase, had to be toned down in modern English, as in the following examples. Adam-Miltiades: "Cover up the boy! Let him not see my blood, and you, away, woman, away from this bosom."

Adam: Dear, let me go!
Look to the boy, don't let him see me die.

Or when Adam-Danton exclaims: "In vain I wage war against my fate!"

Adam: O pointless strife, my cruel destiny!

Or again when Adam-Pharaoh renounces inferior pleasures offered by Lucifer: "My heart does not yearn for these things. They come like compulsory tax, I do not (have to) fight for them, I cannot thank myself for them."

Adam: For such as these I've no desire at all.
They are my dues as tax, compulsory,
no fruit of self-endeavour, no achievement.

### (D) The problem of Obscure Expressions in the Original Text

A few obscure lines in "The Tragedy of Man" have been translated verbatim by earlier translators, thereby perpetuating Madach's obscurity, whereas research into his correspondence could have easily cleared up the point he had in mind, as in the Egyptian scene where Adam is puzzled by his attraction to the slave's wife, Eve, because he does not realise to what extent he is entangled by the occult forces of reincarnation. When he asks Lucifer to shed some light on his predicament, he receives this answer (verbatim): "There is nothing else to do, but learning must deny the existence of this thread, and then power and matter can rudely laugh it off." One is none the wiser until one finds in a letter Madach wrote on the 2nd November 1961 the explanation he offered to the poet Arany. In the light of that the text could be adjusted in translation.

Lucifer: Let scholarship concoct an argument
against the existence of these occult tangles,
then crude materialism can shrug it off.

The "occult tangles" refers to the intangible net of reincarnation, "that subtle gossamer" in which Adam was "trapped for a jest" by the Creator - according to Lucifer. Once the "experts", unable to explain the phenomenon with their limited resources, have declared that it could not possibly exist, the "crude materialism" of the monarch and his followers could likewise dismiss it as non-existent.

### (E) The Problem of Resolving Textual Difficulties with Humour and Body-Language

Eve: Enough, my Lord! For Goodness' sake, have mercy!
Restrain your wit, or I shall die with laughter...
Now, look at these! How very serious.
My Lords, you haven't caught by any chance
the pestilence of new philosophies?
For if you have, stand back! It's so depressing
to hear those people vent their bitter notions
about this peaceful life, this beautiful
and happy world - and brood upon the future.

The underscored lines, translated verbatim, would read like this: "The accursed spirit of innovation? If so, out of my sight!" One sounds odd, even ridiculous, the other out of place or register in modern English. Madach clearly refers to the Reformation, but does not say so. He does not want to be specific, and does not want to be involved with the theological debate. Nor is Eve interested in religion; she does not want a change, because she is happy with the social order as it is. The word "pestilence" in the place of "accursed spirit" allows her to express her disapproval in a humorous way without becoming too "serious" herself. The words "stand back" - in preference to "out of my sight" - maintain this play acting: she does not want to catch the "pestilence". The passage calls for a great deal of body-language to bring out the humour of the scene.

The very last line of Madach's work has given rise to much speculation and misunderstanding. Many say that Madach has taken the easy way out by concluding his great vision with an obscure statement. Nothing can be farther from the truth. Most lines of the present English version have been chopped and changed over and over again through the twenty-odd years of its gestation, but that final line is one of the few that came and remained unchanged in the course of translation. There was never the slightest doubt about its summing up Madach's philosophy.

The Lord: I've told you, Man, have faith and do your best.

Some Hungarians have remarked that the emphatic Hebraic phrase "bizva bizzal", the adverbial-verbal combination of the word "bizni", to trust, amounting to something like "trustingly trust", should have been somehow preserved. Why? The words "have faith" put as much emphasis on the need for faith as do Madach's Hungarian "twins". Our Lord might have said to his disciples: "Fear not, it is I. Have faith!" I appreciate that people who do not know what having FAITH means, will find the expression thin. That, however, cannot be helped. "De captu lectoris habent sua fata libelli" - the saying goes - which could have anticipated "The Tragedy of Man".

Others, mostly English-speaking folk, have objected that "do your best" smacks of a middle-class father encouraging his son, unable to think of something more appropriate. Undeniably, the written words can be given that interpretation - divorced from their context. But with the line following as it does in the wake of a very profound and philosophical poem, only the smart, the cynical and the mischievous could read into it a shallow interpretation with the wrong body-language". The Hungarian word "kuzdj" means "struggle" or "fight" used in the imperative, both words having undertones of suffering and bloodshed in modern English. In the context of the whole poem "doing one's sincere personal best" is the only reasonable interpretation, a fair and noble concept in the world of cut-throat competition.

# ISSUES IN CHINANTEC BILINGUAL LEXICOGRAPHY

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This paper addresses issues involved in creating an electronic, trilingual Chinantec–Spanish–English lexical database as a research tool, from which also to produce, in hardcopy, a bilingual Chinantec–Spanish Spanish–Chinantec dictionary to serve both Chinantec-speaking and scientific communities. Palantla Chinantec (PC) is an Otomanguean language spoken by over 15,000 speakers, primarily rural farmers of the State of Oaxaca, Mexico.[1]

Every language presents its own special challenges to bilingual lexicography. PC, for example, has only finite verbforms to match the infinitive as a standard citation form for verbs. It lacks adjectives except as a class of 'stative' verbs. Gender classes are based on animacy as opposed to the masculine-feminine distinctions of Spanish. PC is highly isolating and monosyllabic in all word classes except verbs which, in addition to having a fairly simple system of prefixes, show a high measure of fusional inflexion expressed by tone, accent, and nasal and vocalic quality to mark voice, mode, tense-aspect, animacy, and person-of-subject.

The PC lexicon is being developed on a Toshiba T1950 486 DX2 electronic notebook, in a Windows (v3.1) environment, with Shoebox (v2.0) as the primary electronic tool for development of the lexicon itself. Additional supporting software include SIL Encore Fonts, Consistent Changes (v7.4), Convert-to-Word (v1.06), and Fiesta (v4.5). This report addresses how the structure of Chinantec and Spanish, and the use of these tools—especially SHOEBOX—are impacting design decisions as the project is being carried forward.

## The structure of SHOEBOX

SHOEBOX was originally developed by John Wimbish of SIL at Pattimura University in Indonesia to aid in the development of dictionaries but was soon empowered with additional analytical tools and powerful searching functions, and is now distributed from the U.S. It permits interaction at any given time between seven database files and one text file.

**Standard Format Markers (SFMs).** All SHOEBOX files are plain-text databases of the Standard Format type, which simply means that each RECORD and each FIELD within a record is a string of plain characters which follow a unique, user-defined, STANDARD FORMAT MARKER, such as '\pr', which in the case of the PC materials stands for 'phonological representation'. The set of SFMs defined to date for the primary PC database (chinlex.db) includes those in (1).

| | | |
|---|---|---|
| (1) | \pr | [phonological representation (lemma)] |
| | \ps | [part of speech] |
| | \rf | [cross reference] |
| | \gl | [english gloss] |
| | \sp | [spanish gloss] |
| | \sf | [spanish finite verbform] |
| | \cn | [limiting context of lemma] |

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[1] Lexical documentation of PC during 1994–1996 is supported by NSF grant SBR-9321193. For an overview of linguistic research in this family of languages, see Merrifield 1993a.

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| | |
|---|---|
| \qc | [qualifying comment] |
| \sg | [spanish grammar] |
| \il | [illus. sentence in english] |
| \ft | [free translation in english] |
| \fs | [free transl. in spanish] |
| \id | [idiom subentry] |
| \idcn | [limiting context of idiom] |
| \ge | [subentry gloss in english] |
| \gs | [subentry gloss in spanish] |
| \gf | [subentry spanish finite verbform] |
| \mpv | [imperative verbform] |
| \nmpv | [negative imperative verbform] |
| \lg | [linguistic notation] |
| \so | [source] |
| \cm | [comment] |
| \lt | [latin biotic taxonomy] |
| \rn | [paronymąSpanish only] |
| \aa | [Al Anderson's datemarker] |
| \wm | [William Merrifield's datemarker] |
| \ck | [needs check w/ language associate] |

Each RECORD must begin with and contain only one \pr field. A new record can be created with just this one field, but before it is very useful it must have at least one gloss field for either English or Spanish and a part-of-speech field. Some fields may, of course, be repeated several times within a record. For management purposes, each record in this project is always created with two datemarker fields so that the two key researchers can keep track of interventions the other is contributing to the database.[2]

Each database is structured around a TEMPLATE which provides the skeletal form of a new record when created. The current template for the primary PC lexical database (chinlex.db) is presented and glossed in (2).

| | | |
|---|---|---|
| (2) | \pr | [phonological representation] |
| | \gl | [english gloss] |
| | \ps | [part of speech] |
| | \sp | [spanish gloss] |
| | \aa | [Al Anderson's datemarker] |
| | \wm | [William Merrifield's datemarker] |

One or the other of the two datemarker fields (\aa, \wm) is set to be updated automatically with the current date every time the corresponding analyst edits a record.

**Lexical databases.** SHOEBOX permits up to seven active databases at any given time. PC data are currently stored in three lexical databases: CHINLEX.DB, NAMES.DB, and SPANISH.DB. Chinlex.db is the main database, which contains most of the lexicon. Because PC text material invariably contains at least a few Spanish words, however, it has seemed prudent to place those words in a separate database named spanish.db. An alternative might be to pass over them in the interlinearization process, without placing them in a database. By putting them in a database of their own, however, an English gloss can be supplied automatically for the gloss line of interlinearized text.

Many Spanish words found in texts are identical or nearly identical in pronunciation to their normal, Mexican Spanish pronunciations, and are typed into spanish.db with standard Spanish spelling. Older borrowings from Spanish, on the other hand, tend to show phonological reshaping and may be placed in chinlex.db complete with tone and accent notation. The word for 'cross' (Sp. *cruz*) is **krɨ́g**$^{LH}$, and is currently located in chinlex.db rather than in Spanish.db. The status of loanwords is noted in a comment (\cm) field. As a matter of fact, the template for the Spanish database automatically supplies such a comment line, as in (3).

(3) \cm borrowed from Spanish [comment]

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[2] On 11 July, 1994, the chinlex.db plain-text file contained 932,159 bytes and was divided into 6063 records with a total of 39,324 individual fields (excluding datemarker fields).

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Names.db is also a 'Spanish' database since it contains Chinantec personal names, all of which come from Spanish. These forms are almost all reshaped sufficiently so that they are best keyboarded as Chinantec rather than Spanish forms, complete with tone.

**Interlinearizing texts.** One of the most important tools in SHOEBOX is its ability to interlinearize texts and simultaneously upgrade the databases from which it draws data for interlinearization. When placed in the text file box of SHOEBOX, a simple vernacular text is separated into numbered records in preparation for interlinearization. So, for example, sentences like those in (4), separated only by period (.), are each set up as a separate, numbered record of a database, as in (5), with a single \pr line as defining field and a numbered reference line as KEY, to keep the records in proper order.

(4) hą$^{M}$ za$^{M}$ giugʔ$^{M}$, za$^{M}$ mi$^{H}$cią$^{M}$ úg$^{M}$ ha$^{H}$ŋiúʔ$^{H}$, hą$^{M}$ za$^{M}$ ʔéi$^{M}$, za$^{M}$
ma$^{M}$huaʔ$^{LM}$, ka$^{L}$ŋie$^{M}$za ta$^{H}$, ta$^{H}$ kiaʔ$^{LM}$ rai$^{LH}$. ka$^{L}$ŋii$^{H}$hmo$^{H}$za ta$^{H}$
kiaʔ$^{LM}$ rai$^{LH}$. ka$^{L}$ŋie$^{M}$za kɨg$^{M}$ si$^{M}$ma$^{HL}$. zii$^{M}$huu$^{LM}$na, ha$^{H}$ hŋii$^{LM}$za,
hɨg$^{M}$ tiogʔ$^{H}$ ʔio$^{LH}$ ha$^{H}$ hŋii$^{LM}$za ka$^{L}$laʔ$^{L}$hą́$^{L}$za, ha$^{H}$ cog$^{LM}$ huu$^{LM}$.

(5) \rf demo 001
\pr hą$^{M}$ za$^{M}$ giugʔ$^{M}$, za$^{M}$ mi$^{H}$cią$^{M}$ úg$^{M}$ ha$^{H}$ŋiúʔ$^{H}$, hą$^{M}$ za$^{M}$ ʔéi$^{M}$,
za$^{M}$ ma$^{M}$huaʔ$^{LM}$, ka$^{L}$ŋie$^{M}$za ta$^{H}$, ta$^{H}$ kiaʔ$^{LM}$ rai$^{LH}$.

\rf demo 002
\pr ka$^{L}$ŋii$^{H}$hmo$^{H}$za ta$^{H}$ kiaʔ$^{LM}$ rai$^{LH}$.

\rf demo 003
\pr ka$^{L}$ŋie$^{M}$za kɨg$^{M}$ si$^{M}$ma$^{HL}$.

\rf demo 004
\pr zii$^{M}$huu$^{LM}$na, ha$^{H}$ hŋii$^{LM}$za, hɨg$^{M}$ tiogʔ$^{H}$ ʔio$^{LH}$ ha$^{H}$ hŋii$^{LM}$za
ka$^{L}$laʔ$^{L}$hą́$^{L}$za, ha$^{H}$ cog$^{LM}$ huu$^{LM}$.

The text is now ready for interlinearizing as soon as an interlinearization template, like that of (6), is defined.

(6)

| | |
|---|---|
| \mr | [morphological representation] |
| \gl | [english gloss] |
| \ft | [free translation in english] |
| \aa | [Al Anderson's datemarker] |
| \wm | [William Merrifield's datemarker] |

This template is configured so that SHOEBOX searches the lexical databases for data to fill in the \mr and \gl fields. The analyst must manually keyboard the contents of the free translation field (\ft), and then SHOEBOX automatically updates the analyst's own datemarker field whenever a record is edited.

The result of interlinearizing the records in (5) is presented in (7). Note in (7), that the \mr line is for the most part identical to the \pr line, except that a few phonological strings, bounded by space, have been divided into morphological units separated by hyphen (-).[3] Nonhyphenated forms in the \mr line come directly from one of the three PC databases mentioned above. Hyphenated forms come from one of two parsing capabilities provided by SHOEBOX—an AUTOMATED PARSER and a user-defined PARSING DATABASE.

(7) \rf demo 001
\pr hą$^{M}$ za$^{M}$ giugʔ$^{M}$, za$^{M}$ mi$^{H}$cią$^{M}$ úg$^{M}$ ha$^{H}$ŋiúʔ$^{H}$, hą$^{M}$ za$^{M}$
\mr hą$^{M}$ za$^{M}$ giugʔ$^{M}$ za$^{M}$ mi$^{H}$ -cią$^{M}$ úg$^{M}$ ha$^{H}$ŋiúʔ$^{H}$ hą$^{M}$ za$^{M}$
\gl one 3 postmenopausal^AIS 3 IMPF-exist^AIS three son 3 one 3

---

[3] Some of the hyphens represent boundaries between PC words and adjacent proclitic or enclitic forms. Others divide prefixes from roots, reflecting the degree to which PC departs from being totally isolating in word structure. It would have been possible to distinguish prefixes from proclitics by using a distinct boundary marker, but this has not been done. There is, in fact, some inconsistency in the database, since some proclitic forms, notably the ubiquitous **ha$^{H}$** 'at', are recorded as separate phonological words bounded by space rather than as bound forms.

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```
\pr ʔéiᴹ, zaᴹ maᴹhuaʔᴸᴹ,      kaᴸŋieᴹza          taᴴ,  taᴴ  kiaʔᴸᴹ raiᴸᴴ.
\mr ʔéiᴹ zaᴹ maᴹ-huaʔᴸᴹ      kaᴸ-ŋiḙᴹ     -za taᴴ   taᴴ  kia̭ʔᴸᴹ raiᴸᴴ
\gl ANAa 3   PRF-large^AIsS PST-go^AIsR3-3  work work of^3in king
\ft There was an old woman who had three sons, one of whom, the
    oldest, went off to work for the king.
\aa 18/Jul/94
\wm 18/Jul/94

\rf demo 002
\pr kaᴸŋiiᴴhmoᴴza          taᴴ    kiaʔᴸᴹ   raiᴸᴴ.
\mr kaᴸ-ŋii̭ᴴ-hmo̭ᴴ     -za taᴴ    kia̭ʔᴸᴹ   raiᴸᴴ
\gl PST-go^R-do^TIR3-3    work   of^3in   king
\ft He went off to work for the king.
\aa 18/Jul/94
\wm 18/Jul/94

\rf demo 003
\pr kaᴸŋieᴹza            kɨgᴹ  sĭᴹmaᴴᴸ.
\mr kaᴸ-ŋiḙᴹ       -za   kɨgᴹ  sĭᴹmaᴴᴸ
\gl PST-go^AIsR3-3       one   week
\ft He went there for one week.
\aa 18/Jul/94
\wm 18/Jul/94

\rf demo 004
\pr ziiᴹhuuᴸᴹna,  haᴴ hŋiiᴸᴹza,      hɨgᴹ tiogʔᴴ     ʔioᴸᴴ haᴴ hŋiiᴸᴹza
\mr ziiᴹ-huuᴸᴹ-na haᴴ hŋii̭ᴸᴹ    -za hɨgᴹ tiogʔᴴ     ʔioᴸᴴ haᴴ hŋii̭ᴸᴹ    -za
\gl mid-road-then at  cease^AIP3-3  ANAi sit AIpP3 woman at  cease^AIP3-3

\pr kaᴸlaʔᴸhǫ́ᴸza,  haᴴ  cogᴸᴹ             huuᴸᴹ.
\mr kaᴸḽaʔᴸhǫᴸ-za  haᴴ  cogᴸᴹ             huuᴸᴹ
\gl all 3a    -3  at   separate^IIP3     road
\ft Now along the way, where he stays, there are women there
    where everyone stays, where there is a fork in the road.
\aa 18/Jul/94
\wm 18/Jul/94
```

The AUTOMATED PARSER consists of a two-column file, as in (8), of frequently occurring strings of one or more prefixes, proclitics, enclitics, or of proclitics with prefixes. In each row of the file, the string in the left column is parsed in the right column, with hyphens at morpheme boundaries and diagnostic English glosses placed within French quotes (« »).

```
(8)  \pre caᴸ             caᴸ«NEG»
     \pre caᴸguᴴ          caᴸ«NEG»-guᴴ«go^I2»
     \pre caᴸhuᴴ          caᴸ«NEG»-huᴴ«if»
     \pre caᴸkaᴸ          caᴸ«NEG»-kaᴸ«PST»
     \pre caᴸkaᴸlĭᴸ       caᴸ«NEG»-kaᴸ«PST»-lĭᴸ«ACT^C»
     \pre caᴸlaᴴ          caᴸ«NEG»-laᴴ«NON»
     \pre caᴸmaᴸ          caᴸ«NEG»-maᴸ«TRM»
     \pre caᴸmaᴸhuᴴ       caᴸ«NEG»-maᴸ«TRM»-huᴴ«if»
     \pre caᴸmaᴸkaᴸ       caᴸ«NEG»-maᴸ«TRM»-kaᴸ«PST»
     \pre caᴸmaᴸnaᴹ       caᴸ«NEG»-maᴸ«TRM»-naᴹ«HOD»
     \pre caᴸmaᴸuᴸ        caᴸ«NEG»-maᴸ«TRM»-uᴸ«come^R»
```

When the first or final elements of a string bounded by spaces are found in text that match an element in the left column of the automated parser, a match of the adjacent elements in the right column of the parser is sought in associated \pr and \gl lines of the three lexical databases. If a match is found, the parsed form is placed in the \mr line of the interlinearization with its gloss beneath it in the \gl line. If no match is found, the analyst can upgrade, on-line, one of the lexical databases with appropriate data, or can move on to the next item to be parsed without filling in these lines for the string in question.

The second source of data for the \mr line is a PARSING DATABASE created by the analyst during the interlinearization process. That is, when an unrecognized string is

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found, a pop-up window provides the analyst an opportunity either to add it to a database or to parse it manually by adding hyphens at morpheme boundaries. This parsed string is copied to the \mr line of the text and also placed in a parsing database which will then automatically recognize it whenever it encounters it again.

The PC materials include such a parsing database, named parse.db, which has the simple template presented in (9). The unparsed \pr string of the text is copied to the \m line, which is the KEY for this database, and the analyst-parsed correlate is copied to the \mr line, both in the parse.db and in the interlinearization. An example of a record in parse.db is presented in (10). This record is required to avoid an automatic parsing by the automated-parsing routing into two prefixes **ka$^{L}$–** and **ŋii$^{H}$–**, which in this case (in the context of **nio$^{H}$**) is incorrect. A match for the individual elements of the \mr line are then sought in the lexical databases and the \gl line of the text is copied in.

(9) \m
\mr

(10) \m ka$^{L}$ŋii$^{H}$nio$^{H}$
\mr ka$^{L}$–ŋii$^{H}$nio$^{H}$

SHOEBOX supports more complex parsing than is currently being employed in this project. It would be possible, for example, to identify idioms in the \pr line by using, say, double hyphen (=) rather than 'space' between the words of an idiom, and then to first parse a string bounded by spaces into an \id line, using an IDIOM DATABASE which would provide both the idiom gloss and a parsing into words. Just in case a string bounded by spaces did not contain a double hyphen, the parsing database would then be searched to see if the word was complex before searching lexical databases.

This approach would create even more repetition of material of the sort seen between the \pr and \mr lines in (7), which is already considerable because of the highly isolating nature of PC. It has not been implemented in the PC project, but the interlinearization in (11) has been generated to demonstrate what such an interlinearization would look like based on the template shown in (12) and records of the sort shown in (13).

(11) \rf demo 005
\pr ʔiug$^{LM}$ tïa$^{LM}$=zía$^{LM}$za ʔi$^{M}$ ka$^{L}$hmo$^{L}$za ʔi$^{M}$ hɨg$^{M}$.
\id ʔiug$^{LM}$‿ tïa$^{LM}$=zía$^{LM}$ -za ʔi$^{M}$ ka$^{L}$–hmo$^{L}$ -za ʔi$^{M}$ hɨg$^{M}$
\ge strong^AIS like^TIS3 -3 REL PST–do^TIC3–3 REL ANAi
\mr ʔiug$^{LM}$‿ tïa$^{LM}$‿ -zía$^{LM}$‿ -za ʔi$^{M}$ ka$^{L}$–hmo$^{L}$ -za ʔi$^{M}$ hɨg$^{M}$
\gl strong^AIS reach^IIP3-thorax^3-3 REL PST–do^TIC3–3 REL ANAi
\ft He is very pleased to have done that.

(12) \m
\gl
\ps
\sp
\mr

(13) \m tïa$^{LM}$=zía$^{LM}$
\gl like^TIS3
\gl like^TIS1p
\ps TIS
\sp gustarse
\sf le gusta
\il Li$^{L}$tïa$^{L}$ báʔ$^{H}$ ʔogʔ$^{LM}$ ʔniaʔ$^{LM}$ má$^{L}$.
\ft You (pl) will get to like the food.
\fs Uds. les van a gustar la comida.
\mr tïa$^{LM}$-zía$^{LM}$

### PC word structure and the dictionary

Chinantec has two MAJOR parts of speech and several MINOR ones. The two, large, relatively open classes, are, predictably, NOUNS and VERBS. Nouns are animate or inanimate; a few are inflected for person-of-possessor. Numerals and deictic words exhibit concordance with nouns in respect to animacy by fusional inflexion. The following sections document how these and other grammatical characteristics of PC are impacting database and dictionary design.

**Noun classes.** Whereas Spanish noun classes contrast masculine and feminine gender, PC nouns are animate or inanimate as reflected by the inflexion of associated verbs,

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numerals, and deictic words. This mismatch of categories between the two languages creates no particular theoretical difficulty but entails programmatic decisions for the dictionary maker. The notations used in the database for these categories are listed in (14).

(14)

| | technical | Chinantec | Spanish |
|---|---|---|---|
| inanimate noun | NI | > *s* | |
| animate noun | NA | > *s an* | |
| masculine noun | | | el > *m* |
| feminine noun | | | la > *f* |

This is resolved for PC as follows. PC nouns are INANIMATE or ANIMATE, with inanimate forms comprising the unmarked set. The electronic database stores this information in English as NI and NA, respectively, in the part-of-speech (\ps) field. It will be translated automatically in the dictionary to *s* (sustantivo) or *s an* (sustantivo animato) by use of the consistent changes (CC) software. Spanish nouns are MASCULINE *(m)* or FEMININE *(f)*. This information is stored in the spanish gloss (\sp) field of the database in the form of a masculine or feminine article (el, la) preposed to the Spanish noun gloss. It appears in the Chinantec side of the dictionary as it appears in the \sp field, and is converted to *m* or *f* on the Spanish side of the dictionary by a consistent changes (cc) table. The contrasting grammatical notations are summarized in (14), and their appearance in Chinantec and Spanish entries is illustrated in (15).[4]

(15) a. **búʔ**$^{H}$ *s an* el burro [donkey] . . .
**cag**$^{H}$ *s* la subida [ascent]. . .
**cếʔ**$^{L}$ *s* el panal [honeycomb] . . .
**cíʔ**$^{M}$ *s an* la luna [moon] . . .

b. **burro** *m* búʔ$^{H}$ . . .
**luna** *f* ciʔ$^{M}$ . . .
**panal** *m* cêʔ$^{L}$ . . .
**subida** *f* cag$^{H}$ . . .

**Numerals and deictic words.** The animacy of numerals and deictic words is governed by that of their head noun, as in (16), where the homophonous nouns meaning 'basket' and 'snake', respectively, are distinguished by the inflexion of their adjuncts.

(16) a. kɨ̧g$^{M}$ mïʔ$^{M}$ la$^{M}$
one basket this
this (one) basket

b. hą$^{M}$ mïʔ$^{M}$ ląg$^{LM}$
one snake this
this (one) snake

The two forms of the numeral 'one' and the two forms of the proximal deictic 'this' must each have their own entry on the PC side of the dictionary, and it follows from this that they require separate records in the database. Such gender pairs can cross-reference one another, but in the case of numerals and deictic words, in particular, it will be useful, at least in the dictionary, to have separate appendices (as part of a larger grammatical statement) to illustrate numeric and deictic systems, as well as separate entries for the basic elements of the systems.

The contents of such appendices are easily produced at any time within SHOEBOX by the use of user-defineable filters which create, in effect, VIRTUAL databases which allow the user to browse through only those records that satisfy the specifications of the filters. Since each dictionary entry has a part-of-speech field, it is possible to set a filter to search on this field for all numerals or all deictic words and to browse through them or, if desired, copy them to a separate file for further processing.[5]

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[4] Note that English will not occur in the printed dictionary, but English glosses are at times provided in square brackets in illustrations in this presentation to aid non-Spanish-speaking readers.

[5] It is inadvisable to maintain subsets of lexical forms in separate, working databases in SHOEBOX if the interlinearizing function of SHOEBOX is intended to be used and homophony is involved. For interlinearizing text, SHOEBOX follows a user-defined search path from one database to another, to a maximum of seven databases. If homophonous forms are placed within a single database and one of them is encountered in text being interlinearized, a dialog box appears to permit the user to choose the correct form. If the homophonous forms are located in separate databases, however, the form located first is chosen, as determined by the path previously defined by the user, without the further possibility of user intervention. The

**Inalienably possessed nouns.** Inalienably possessed nouns undergo phonological reshaping when changing the person-of-possessor. The four inflectional categories of person are FIRST PERSON SINGULAR, FIRST PERSON PLURAL, SECOND PERSON, and THIRD PERSON. The lexicographic solution here is to choose one form (the third-person form) for the MAIN entry and to assign others the status of MINOR entries which normally provide only a gloss and a cross-reference to the related main entry. Thus, in (17), a minor entry with the first-singular form meaning 'my tongue' references a fuller, main entry meaning 'his/her/their/our tongue(s)'.

(17) a. \pr cïʔ$^{L}$
\gl tongue⁀1s
\rf cïʔ$^{H}$
\sp mi lengua

b. \pr cïʔ$^{H}$
\gl tongue‿3
\gl tongue⁀1p
\ps NI⁀3
\sp su lengua (de él, ella(s), ello(s))
\sp nuestra lengua
\id za$^{M}$ ma$^{M}$cii$^{M}$ ʔag$^{H}$ cïʔ$^{H}$
\ge one who has learned to speak
\gs uno que ya sabe hablar
\cm lit. one who has a mouth and tongue
\so TXT-54 107

In isolation, these two entries look similar enough to suggest that the minor entry (or record) could simply be subsumed within the main entry (or record). There are two reasons why this is not advisable. First, as long as we wish to maintain an interlinearizing capability within the database, the differing forms need to be in separate records. Second, although the two forms differ only by tone, there will be numerous other entries (records) between and around these two that are also very similar. For the user of the dictionary or the database who has a limited knowledge of the language, it will be worthwhile to provide this extra help in identifying the inflected forms of such words. In many cases, moreover, the inflexional differences are greater than those seen in (17).

**Verbs.** PC has only finite verbforms to match the infinitive of Spanish as a standard citation form for verbs. A few examples of PC nonfinite verbforms where finite forms might otherwise be expected are presented in (18).

(18) a. ʔno$^{L}$-hni ʔi$^{M}$ ŋii$^{H}$-hmo$^{L}$-hni ta$^{H}$ hïa$^{H}$ huïi$^{M}$.
want-I that will⁀go-do-I work in town
I want to go work in town.

b. Kuï$^{LM}$-za ʔi$^{M}$ ŋii$^{M}$-hmo$^{L}$-hni ta$^{H}$ hïa$^{H}$ huïi$^{M}$.
gives-he that will⁀go-do-I work within town
He lets me go work in town.

c. Ca$^{L}$-zio$^{L}$ kięg$^{H}$ hniag$^{H}$ kiaʔ$^{LM}$ ʔio$^{LH}$ kią$^{M}$ hniag$^{H}$.
NEG-good will⁀beat we of woman of us
It is bad for us to beat our wives.

d. Ka$^{L}$kuɨi$^{L}$ cią g$^{H}$ ma$^{M}$-ka$^{L}$-tí$^{M}$ míi$^{M}$ kiaʔ$^{LM}$.
fled deer has⁀reached ball of
The deer struck by the bullet fled.

The lack of a PC infinitive requires that choice of a citation form be made from among nonfinite forms and that the grammatical difference between PC and Spanish entries be bridged in some overt way. In a dictionary to be used only by persons with linguistic training, this difference could easily be bridged in a foreword. In one to be used by Chinantec speakers, however, most of whom lack formal language training and have limited knowledge of Spanish, more explicit help is needed in individual dictionary entries.

Bartholomew and Schoenhals (1983) carefully discuss the question of choosing a citation form for verbs in languages like PC. Third-person progressive has been chosen

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exception to this is that SHOEBOX searches both the automated parser and other databases that exist, permitting the user to choose between alternate parsings that may exist for a particular string.

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for PC active verbs. To bridge the distance between the Spanish infinitive and corresponding PC forms, nonfinite Spanish forms that correspond most closely to the PC citation form are provided following the infinitive, separated by colon (:). This is illustrated in (19a) for the Spanish–Chinantec side of the dictionary. On the Chinantec–Spanish side of the dictionary, the citation form is followed by the Spanish infinitive and as many finite forms as are appropriately associated with the lemma, in this case three (third-person progressive, intentive, and completive),[6] as in (19b).

(19) a. **hacer rodar: hace rodar** [to cause to roll: s/he causes to roll] *vt* bą́$^{M}$dsa . . .
b. **bą́$^{M}$** *vt* hacer rodar: hace rodar, hará rodar, hizo rodar [to cause to roll: s/he causes to roll, s/he will cause to roll, s/he caused to roll]. . .

This information is stored in the database in the form indicated in (20), with appropriate technical English glosses in \gl fields, the Spanish infinitive in the \sp field, and the Spanish finite glosses that correspond to the English glosses in \sf fields. It is possible to produce the completely formatted entries of (19) from (20), by use of CC and CTW software.

(20)
```
\pr bą́M
\gl roll^TIP3
\gl roll^TII3
\gl roll^TIC3
\ps TI
\sp hacer rodar
\sf hace rodar
\sf hará rodar
\sf hizo rodar
```

**PC lacks adjectives as such.** Verbs are ACTIVE or STATIVE; most notionally adjectival stems (Dixon 1977) are stative verbs. These facts are documented in Merrifield 1993b; only a few supporting illustrations are presented here. The most distinctive attribute of an active PC verb, as opposed to a PC stative verb, is its ability to occur directly with the past tense prefix **ka$^{L}$–** (past),[7] as in the first-person forms presented in (21).

| | | | |
|---|---|---|---|
| (21) ʔo$^{LM}$ | hní$^{M}$ | 'I cry' | [Progressive] |
| ʔo$^{LH}$ | hní$^{M}$ | 'I will cry' | [Intentive] |
| ka$^{L}$ʔo$^{L}$ | hní$^{M}$ | 'I cried' | [Completive] |

A stative verb, in contrast, requires the derivational prefix **li$^{L}$–** (reduced from the past tense active form **lia$^{L}$** 'became, happened') when occurring with this prefix, and requires the intentive-aspect form **li$^{L}$–** (reduced from **lé$^{M}$** 'will become') to denote intentive aspect. A typical stative verb, with derived active counterparts is presented in (22). Note that the activized root, in this case, undergoes phonological reshaping in the form of a tone shift from high to low.

| | | | |
|---|---|---|---|
| (22) zog$^{H}$ | hní$^{M}$ | 'I am sick.' | [Stative] |
| li$^{L}$zog$^{L}$ | hní$^{M}$ | 'I will get sick.' | [Derived intentive] |
| ka$^{L}$li$^{L}$zog$^{L}$ | hní$^{M}$ | 'I got sick.' | [Derived completive] |

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[6] This is a compromise since PC third-person forms do not normally distinguish number. Plural Spanish verbforms could, therefore, also be appropriately listed along with the singular forms. With regular verbs this could easily be accommodated by adding 'n' in parentheses. With nonregular verbs, this becomes more cumbersome (e.g., hace(n), hará(n), hizo, hicieron). The fact that third-person Spanish forms are at the same time polite second-person forms is also a question to be considered, but while the dictionary must be designed to serve Chinantec speakers as much as possible, it cannot bear the burden of having to teach extensive amounts of Spanish grammar.

[7] And **na$^{M}$–** (hodiernal past).

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All attributive modifiers of nouns in PC are best treated as relative clauses, and exhibit the same structure whether the verbal form is active or stative.

```
(23) a. H        M[P[H        M[H          M]]   S]
        ʔmïaʔᴸᴹ  tegᴹ ^       ʔiugᴸᴹ ^     hmáʔᴸ 0
        cloth    white^IIS3   strong^IIS3  very
        cloth that is very strongly white

     b. H        M[P          S] M[P           S          O]
        ʔmïaʔᴸᴹ  hláʔᴴ ^      0  kaᴸkuïᴸ ^     miᴴciiᴸ ^  0
        cloth    fancy^IIS3      PST-give^TIC3 mother^1s
        cloth that is fancy, that my mother gave (me)
```

Comparative expressions are the same for active and stative verbs.

```
(24) MORE             X                    THAN       Y
     ʔiugᴸᴹ ^    hɨ́ʔᴴ ʔiᴹ  zogᴴ ^      hníᴹ kǫ́ʔᴸ hɨ́ʔᴴ ʔiᴹ  zogʔᴴ ^     ʔnigᴹ.
     strong^IIS3 Cf   REL  sick^AIS1s 1s   than Cf   REL  sick^AIS2 2s
     I am more sick than you (are sick).

(25) MORE             X                    THAN       Y
     ʔiugᴸᴹ ^    hɨ́ʔᴴ ʔiᴹ  ŋïàᴸᴹ ^      hníᴹ kǫ́ʔᴸ hɨ́ʔᴴ ʔiᴹ  ŋïaʔᴹ ^     ʔnigᴹ.
     strong^IIS3 Cf   REL  walk^AIP1s 1s   than Cf   REL  walk^AIP2 2s
     I run more than you (run).
```

The implications of these facts are not terribly profound in respect to the dictionary, but they do result in a mismatch between the word categories of Spanish and PC. Spanish adjectives normally translate into PC stative verbs, and most (but not all) PC statives are translated by Spanish adjectives. A small number correspond to Spanish verbs, among them, predictably verbs meaning 'want', 'love', and 'know'.

In cases where Spanish word categories correspond on a one-to-one basis with those of PC, no special information is required in the database. In cases where they do not, a special 'spanish grammar' field (\sg) provides the special information, as in (26). This results in entries on either side of the dictionary like those in (27).

```
(26) \pr zoʔᴴ^
     \gl sick^AIS3
     \gl sick^AIS1p
     \ps AIS
     \sp enfermo
     \sg adj
```

(27) a. **zoʔᴴ** *vi an de estado* estar enfermo: está enfermo, estamos enfermo [to be sick: is sick, we are sick] . . .

**ŋiiᴸᴹ** *vt de estado* saber: sabe [to know: knows] . . .

b. **enfermo** *adj* **estar** ~ zoʔᴴza . . .

**saber: sabe** *vt* ŋiiᴸᴹ . . .

**Verbal paradigms.** Documenting complete verbal paradigms in a Chinantecan language is a daunting task. It first takes a considerable time for an investigator to master the difficult phonological nuances of the accentual system to a degree sufficient to be able to correctly identify paradigmatic forms, although this is now less difficult than it was when the general phonological characteristics of Chinantecan languages were less well known. It then takes a great deal of careful work to elicit each paradigm, being careful not only to capture the phonology correctly but also to ensure that the forms elicited actually occupy the particular grammatical positions within the paradigm for which they are elicited. Success in this rests in great measure on the natural abilities and training of the Chinantec-speaking language associates with whom the investigator works.

A great deal of such data were elicited for PC during and around 1960, but a great deal remains to be done, both in attaining a satisfactory level of understanding of the full range of verbal phenomena and in accurately documenting all the verbs which ought to be in the database. One of the primary goals of the current project is to complete this documentation and round out our understanding of PC verbal structure.

To do this, six, semi-annual two-week training sessions will be provided in southern Mexico over the next three years for Chinantec associates already proficient in reading Chinantec, to train them in aspects of Chinantec verb structure, to write Chinantec, and to assemble complete paradigms in each of the various voices of particular Chinantec verbs. A first group of four associates received initial training of this type in Tuxtepec, Oaxaca, in April of this year. Three of the four proved adept enough at these skills to be further employed to produce paradigms and appropriate illustrative sentences for a list of citation forms provided to them from the database. The first results of this reasearch is due to be received this month and the second training session is scheduled for October, when, it is hoped, these three men and additional associates will be involved.

The distinct phonological forms which occur in the paradigm of an active PC verb are found among the twenty-two grammatical positions illustrated in (28) for a typical animate intransitive (AI) verb. In earlier Chinantecan reports (e.g., Merrifield 1968, Anderson 1989, Rupp 1989, Merrifield and Rensch 1990, Westley 1991, Foris 1993, and others) it has been customary to display such paradigmatic material using matrices of the general form presented in (29).

(28) **ʔo$^{LM}$** *vi an* [15D'] 1 llorar: llora [to weep: weeps] **ʔo$^{LM}$za.** Una persona llora (está llorando). [Someone is weeping.] 2 ~ **tí$^{M}$** gritar: grita [to shout: shouts] ʔo$^{LM}$za tí$^{M}$. Una persona grita (está gritando) en voz alta. [Someone is shouting.] . . .

first person singular

| | | | |
|---|---|---|---|
| Progressive | ʔo$^{LM}$ | hní$^{M}$ | 'I cry' |
| Intentive | ʔo$^{LH}$ | hní$^{M}$ | 'I will cry' |
| Completive | ka$^{L}$ʔo$^{L}$ | hní$^{M}$ | 'I cried' |
| Directional | ŋii$^{H}$ʔo$^{L}$ | hní$^{M}$ | 'I will go cry' |
| Return | ka$^{L}$ŋii$^{H}$ʔo$^{L}$ | hní$^{M}$ | 'I went, cried, and returned' |

first person plural

| | | | |
|---|---|---|---|
| Progressive | ʔïg$^{M}$ | hniag$^{H}$ | 'we cry' |
| Intentive | ʔïg$^{H}$ | hniag$^{H}$ | 'we will cry' |
| Completive | ka$^{L}$ʔïg$^{H}$ | hniag$^{H}$ | 'we cried' |
| Directional | zï$^{H}$ʔïg$^{H}$ | hniag$^{H}$ | 'we will go' |
| Return | ka$^{L}$ŋii$^{H}$ʔïg$^{H}$ | hniag$^{H}$ | 'we went, cried, and returned' |

second person

| | | | |
|---|---|---|---|
| Progressive | ʔïgʔ$^{M}$ | ʔnig$^{M}$ | 'you cry' |
| Intentive | ʔïgʔ$^{H}$ | ʔnig$^{M}$ | 'you will cry' |
| Completive | ka$^{L}$ʔagʔ$^{H}$ | ʔnig$^{M}$ | 'you cried' |
| Directional | gu$^{H}$ʔagʔ$^{H}$ | ʔnig$^{M}$ | 'you will go cry' |
| Return | ka$^{L}$ŋii$^{H}$ʔagʔ$^{H}$ | ʔnig$^{M}$ | 'you went, cried, and returned' |

third person

| | | | |
|---|---|---|---|
| Progressive | ʔo$^{LM}$ | za$^{M}$ | 's/he cries' |
| Intentive | ʔo$^{L}$ | za$^{M}$ | 's/he will cry' |
| Completive | ka$^{L}$ʔo$^{L}$ | za$^{M}$ | 's/he cried' |
| Directional | zï$^{L}$ʔïg$^{M}$ | za$^{M}$ | 's/he will go cry' |
| Return | ka$^{L}$ŋii$^{H}$ʔïg$^{H}$ | za$^{M}$ | 's/he went, cried, and returned' |

| | | |
|---|---|---|
| imperative | ¡ʔag$^{H}$! | 'cry!' |
| negative imperative | ¡ca$^{L}$ʔïg$^{M}$! | 'stop crying!' |

(29)

| weep (AI) | 1s | 1p | 2 | 3 |
|---|---|---|---|---|
| Plp | ʔo$^{LM}$ | ʔïg$^{M}$ | ʔïgʔ$^{M}$ | ʔo$^{LM}$ |
| Ilp | ʔo$^{LH}$ | ʔïg$^{H}$ | ʔïgʔ$^{H}$ | ʔo$^{L}$ |
| Clp | ʔo$^{L}$ | ʔïg$^{H}$ | ʔagʔ$^{H}$ | ʔo$^{L}$ |
| Dlp | ʔo$^{L}$ | ʔïg$^{H}$ | ʔagʔ$^{H}$ | ʔïg$^{M}$ |
| Rlp | ʔo$^{L}$ | ʔïg$^{H}$ | ʔagʔ$^{H}$ | ʔïg$^{H}$ |

impv: ʔag$^{H}$ neg impv: ʔïg$^{M}$

This verb is not very productive as far as changes in voice are concerned, but there is a transitive animate (TA) paradigm of it which means 'to cry concerning someone'

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such as a deceased person. Its paradigm, presented in (30), is simpler than the animate intransitive paradigm of (29).

(30) **ʔógʔ**$^{M}$ *vt an* [41] llorar de: llora de, llorará de, lloró de [to mourn: mourns, will mourn, mourned] **ʔógʔ**$^{M}$ **za**$^{M}$ **ʔlai**$^{H}$. Llora del difunto. [S/he mourns the deceased.] . . .

| weep (TA) | 1s | 1p | 2 | 3 |
|---|---|---|---|---|
| P1p | ʔogʔ$^{H}$ | ʔogʔ$^{H}$ | ʔogʔ$^{H}$ | ʔógʔ$^{M}$ |
| I1p | ʔogʔ$^{H}$ | ʔogʔ$^{H}$ | ʔogʔ$^{H}$ | ʔógʔ$^{M}$ |
| C1p | ʔogʔ$^{H}$ | ʔogʔ$^{H}$ | ʔogʔ$^{H}$ | ʔógʔ$^{M}$ |
| D1p | ʔogʔ$^{LH}$ | ʔogʔ$^{LH}$ | ʔogʔ$^{LH}$ | ʔogʔ$^{LH}$ |
| R1p | ʔogʔ$^{H}$ | ʔogʔ$^{H}$ | ʔogʔ$^{H}$ | ʔogʔ$^{H}$ |

impv: ʔogʔ$^{H}$ neg impv: ʔogʔ$^{H}$

A more productive verb in terms of voice parameters is **bá**$^{M}$ 'strike' which exhibits at least the following five paradigms:

(31) **bá**$^{M}$ *vt* [26] **1** golpear, pegar: pega [to strike: strikes] **Bá**$^{M}$**za hnai**$^{H}$ **ʔníú**$^{LM}$. Una persona pega (está pegando) la puerta. **2** ~ **hneg**$^{M}$ desvainar: desvaina frijól [shell beans] **Bá**$^{M}$ **za**$^{M}$ **hneng**$^{M}$. Desvaina (está desvainando) los frijoles.

| strike (TI) | 1s | 1p | 2 | 3 |
|---|---|---|---|---|
| P | bá$^{M}$ | ba$^{LM}$ | báʔ$^{M}$ | bá$^{M}$ |
| I | bá$^{H}$ | ba$^{LH}$ | báʔ$^{H}$ | bá$^{M}$ |
| C | bá$^{M}$ | ba$^{LH}$ | báʔ$^{L}$ | bá$^{M}$ |
| D | bá$^{M}$ | ba$^{LH}$ | báʔ$^{L}$ | ba$^{LM}$ |
| R | bá$^{H}$ | ba$^{LH}$ | báʔ$^{H}$ | ba$^{LH}$ |

impv: bá$^{L}$ neg impv: bá$^{M}$

(32) **bą́**$^{M}$ *vt an* [26] golpear a, pegar a: pega a [to strike: strikes] **Ca**$^{L}$**zio**$^{L}$ **bą́**$^{M}$ **za**$^{M}$ **ŋioʔ**$^{LM}$ **ʔio**$^{LH}$ **kią́**$^{LM}$. Es malo que el hombre pegue a la mujer. [It is bad for a man to strike his woman.] . . .

| strike (TA) | 1s | 1p | 2 | 3 |
|---|---|---|---|---|
| P | bą́$^{M}$ | bą$^{LM}$ | bą́ʔ$^{M}$ | bą́$^{M}$ |
| I | bą́$^{H}$ | bą$^{LH}$ | bą́ʔ$^{H}$ | bą́$^{M}$ |
| C | bą́$^{M}$ | bą$^{LH}$ | bą́ʔ$^{L}$ | bą́$^{M}$ |
| D | bą́$^{M}$ | bą$^{LH}$ | bą́ʔ$^{L}$ | bą$^{LM}$ |
| R | bą́$^{H}$ | bą$^{LH}$ | bą́ʔ$^{H}$ | bą$^{LH}$ |

impv: bą́$^{L}$ neg impv: bą́$^{M}$

(33) **bú**$^{M}$ *vtn* [26] golpear a, pegar a: pega a **Bú**$^{M}$**za hniiʔ**$^{H}$. Nos pega (están pegando) a nosotros. [They strike us.] . . .

| strike (TF) | 1s | 1p | 2 | 3 |
|---|---|---|---|---|
| P | — | — | búʔ$^{M}$ | bú$^{M}$ |
| I | — | — | búʔ$^{H}$ | bú$^{M}$ |
| C | — | — | búʔ$^{L}$ | bú$^{M}$ |
| D | — | — | búʔ$^{L}$ | bu$^{LM}$ |
| R | — | — | búʔ$^{H}$ | bu$^{LH}$ |

impv: bú$^{L}$ neg impv: bú$^{M}$

(34) **búʔ**$^{M}$ *vd* [2] **1** golpear, pegar: pega **Búʔ**$^{M}$**za ʔma**$^{M}$ **pa**$^{H}$ **hnai**$^{H}$ **ʔníú**$^{LM}$. El pega (está pegando) la puerta con un palo grande. **2** clavar: clava **Búʔ**$^{M}$ **za**$^{M}$ **mĩi**$^{L}$**ŋíi**$^{H}$ **hag**$^{LH}$ **ʔma**$^{M}$. Una persona clava (está clavando) la tabla.

| strike (DI) | 1s | 1p | 2 | 3 |
|---|---|---|---|---|
| P | búʔ$^{LM}$ | búʔ$^{LM}$ | búʔ$^{LM}$ | búʔ$^{M}$ |
| I | búʔ$^{LH}$ | búʔ$^{LH}$ | búʔ$^{LH}$ | búʔ$^{M}$ |
| C | búʔ$^{L}$ | búʔ$^{LH}$ | búʔ$^{L}$ | búʔ$^{M}$ |
| D | búʔ$^{L}$ | búʔ$^{LH}$ | búʔ$^{L}$ | búʔ$^{L}$ |
| R | búʔ$^{LH}$ | búʔ$^{LH}$ | búʔ$^{LH}$ | búʔ$^{LH}$ |

impv: búʔ$^{L}$ neg impv: búʔ$^{LM}$

(35) **bą$^{LH}$** *vm* **zĩ$^{M}$** [26] 1 chocar contra, estrellarse contra, dar con: da con [to collide with, collides with] **Zĩ$^{M}$bą$^{LH}$za ʔuĩ$^{L}$.** Una persona da con (está dando con) el suelo. [Someone collides with the floor.] . . .

| strike (TM) | 1s | 1p | 2 | 3 |
|---|---|---|---|---|
| P | bą$^{LH}$ | bą$^{LH}$ | bą$^{LH}$ | bą$^{LH}$ |
| I | bą$^{LH}$ | bą$^{LH}$ | bą$^{LH}$ | bą$^{LH}$ |
| C | bą$^{LH}$ | bą$^{LH}$ | bą$^{LH}$ | bą$^{LH}$ |
| D | — | — | — | — |
| R | — | — | — | — |

impv: none neg impv: none

**Interlinearizing verb morphology.** The fact that PC is highly inflexional in its verbal morphology has implications for the way this information can be stored in the database and copied to the gloss line of an interlinearized text. A typical PC verb paradigm was presented in (29), which includes ten distinct phonological strings, namely,

(36) ʔag$^{H}$, ʔagʔ$^{H}$; ʔo$^{L}$, ʔo$^{LM}$, ʔo$^{LH}$; ʔïg$^{M}$, ʔïgʔ$^{M}$; ʔíg$^{M}$, ʔíg$^{H}$, ʔígʔ$^{H}$

all but two of which occupy more than one position in the paradigm. To properly interlinearize PC texts, all these forms must have their own records in the database, and the various positions each occupies must be listed as a gloss. To accomplish this, the citation form **ʔo$^{LM}$** (progressive third person) is placed in a MAIN ENTRY which may be elaborated to include any of the fields listed in (1), and the rest are placed in MINOR ENTRIES cross-referenced to it. A minor entry is then limited in respect to the fields it will include, these normally being gloss fields (\gl, \sp) and a cross-reference field (\rf). The ten records for this paradigm will then appear, in part, as in (37).

(37) a. \pr ʔag$^{H}$
\gl cry^AI!
\rf ʔo$^{LM}$

b. \pr ʔagʔ$^{H}$
\gl cry‿AIC2
\gl cry‿AID2
\gl cry^AIR2
\rf ʔo$^{LM}$

c. \pr ʔïg$^{M}$
\gl cry‿AIP1p
\gl cry^AI^NEG!
\rf ʔo$^{LM}$

d. \pr ʔïgʔ$^{M}$
\gl cry^AIP2
\rf ʔo$^{LM}$

e. \pr ʔíg$^{H}$
\gl cry‿AII1p
\gl cry‿AIC1p
\gl cry‿AID1p
\gl cry‿AIR1p
\gl cry^AIR3
\rf ʔo$^{LM}$

f. \pr ʔíg$^{M}$
\gl cry^AID3
\rf ʔo$^{LM}$

g. \pr ʔígʔ$^{H}$
\gl cry^AII2
\rf ʔo$^{LM}$

h. \pr ʔo$^{L}$
\gl cry‿AIC1s
\gl cry‿AII3
\gl cry‿AIC3
\gl cry‿AID1s
\gl cry^AIR1s
\rf ʔo$^{LM}$

i. \pr ʔo$^{LM}$
\gl cry‿AIP1s
\gl cry^AIP3
\ps AI 15 D'
\sp llorar
\mpv ¡ʔag$^{H}$!
\nmpv ¡ca$^{L}$ʔïg$^{M}$!

j. \pr ʔo$^{LH}$
\gl ccry^AII1s
\rf ʔo$^{LM}$

The notation '15 D'' in the part-of-speech (\ps) line of (37i) codifies for the linguist, within the main entry, the inflexional configuration the minor entries for this verb make explicit. The linguist can look up this notation in a grammatical statement (e.g., Merrifield 1965:34–40) to find the ten forms and their denotations; but for the less sophisticated user of the dictionary—and for the linearization routine of SHOEBOX—the minor entries are needed.

**Idioms.** The ability of SHOEBOX to accommodate both a word parser and an idiom parser was touched on above. In this section, we look further at how texts must be

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prepared to make this work and at some of the limitations that exist. SHOEBOX interlinearization looks first in the \pr line of a text for strings bounded by space. Idioms must then be distinguished from words by a special boundary marker such as double hyphen. To pursue the illustration of parsing idioms, we can begin with a group of idioms based on **tĩa**$^{LM}$ 'teacher, craftsman':

| | | | | | |
|---|---|---|---|---|---|
| (38) | **tĩa**$^{LM}$ **ʔmá**$^{L}$ | 'carpenter' | *cf* | **ʔma**$^{M}$ | 'tree, wood' |
| | **tĩa**$^{LM}$ **mía**$^{LM}$ | 'doctor' | *cf* | **mía**$^{LM}$ | 'medicine' |
| | **tĩa**$^{LM}$ **ŋií**$^{H}$ | 'tinsmith' | *cf* | **ŋií**$^{H}$ | 'wood' |
| | **tĩa**$^{LM}$ **sí**$^{L}$ | 'secretary' | *cf* | **si**$^{M}$ | 'paper' |

If we want the SHOEBOX interlinearization routine to recognize and gloss these phrases as idioms in a text, their internal space must be replaced by a symbol such as the 'double hyphen' (=) when keyboarding the text. At present, these idioms have been included in the PC database within the main entry for 'teacher' as subentries (using the idiom format marker (\id), as in (39a), and also (redundantly) as separate main entries which cross-reference the first one, as in (39b)–(39e). Whether the idiom will need to appear in the published bilingual dictionary as both a main entry and as subentries will be decided later, in consultation with Chinantec language associates.

```
(39) a. \pr tïaLM
        \gl teacher
        \ps NA
        \sp el maestro
        \sp la maestra
        \id tïaLM=ʔmáL
        \ge carpenter
        \gs el carpintero
        \rf ʔmaM
        \id tïaLM=míaLM
        \ge doctor
        \gs el doctor
        \rf míaLM
        \id tïaLM=síL
        \ge town^secretary
        \gs el secretario
        \rf siM
        \id tïaLM=ŋiíH
        \ge tinsmith
        \gs el hojalatero
        \rf ŋiíH

     b. \pr tïaLM=ʔmáL
        \gl carpenter
        \ps NA
        \sp el carpintero
        \cm lit. wood craftsman
        \rf tïaLM
        \rf ʔmaM

     c. \pr tïaLM=míaLM
        \gl doctor
        \ps NA
        \sp el doctor
        \cm lit. medicine craftsman
        \rf tïaLM
        \rf míaLM

     d. \pr tïaLM=ŋiíH
        \gl tinsmith
        \ps NA
        \sp el hojalatero
        \cm lit. metal craftsman
        \rf tïaLM
        \rf ŋiíH

     e. \pr tïaLM=síL
        \gl town^secretary
        \ps NA
        \sp el secretario
        \cm lit. paper craftsman
        \rf tïaLM
        \rf siM
```

Verbal idioms involve the additional complexity peculiar to all verbs that they require each inflected form to be available to interlinearization in a separate entry. So, for example, the inanimate intransitive verb 'to reach' requires a main entry (40a) for its citation form (progressive third person) and two minor entries for intentive (40b) and completive (40c) forms.

A stative idiom meaning 'to like' based on this verb and the word meaning 'chest, seat of emotions' must not only have its own citation form (41a), but must have two minor entries (41b) and (41c) for first-singular and second-person subjects, and three additional minor entries (41d)–(41f) for forms occurring with the activizing prefixes **li**$^{L}$– 'will become' and **lĩ**$^{L}$– 'became'.

(40) a. \pr tïa$^{LM}$
\gl reach^IIP3
\ps II
\sp alcanzar
\id tïa$^{LM}$=zía$^{LM}$
\ge like
\gs gustarse

b. \pr tïa$^{L}$
\gl reach^III3
\rf tïa$^{LM}$
\sp alcanzar

c. \pr tí$^{M}$
\gl reach^IIC3
\rf tïa$^{LM}$
\sp alcanzar

Nor does this solve all the problems of interlinearizing idioms as the illustrative sentence (in the \il field) in (41a) shows, since the words of an idiom do not always occur adjacent to one another or even in the same order. In the sentence in question, a modal adverb **báʔ$^{H}$** (affirmation) intervenes between the two parts of the idiom. It would be unmanageable, in SHOEBOX, to accommodate automatic recognition of idioms in all situations; but, it is possible to parse some idioms, some of the time, in this way.

(41) a. \pr tïa$^{LM}$=zía$^{LM}$
\gl like^TIS3
\gl like^TIS1p
\ps TIS
\sp gustarse
\sf le gusta
\il Li$^{L}$tïa$^{L}$ báʔ$^{H}$ ʔogʔ$^{LM}$ ʔniaʔ$^{LM}$ má$^{L}$.
\ft You will get to like the food.
\fs Uds. les van a gustar la comida.
\rf tïa$^{LM}$
\rf zía$^{LM}$

b. \pr tïa$^{LM}$=zïa$^{L}$
\gl like^TIS1s
\rf tïa$^{LM}$=zía$^{LM}$
\sp gustarse

c. \pr tïa$^{LM}$=ʔogʔ$^{LM}$
\gl like^TIS2
\rf tïa$^{LM}$=zía$^{LM}$
\sp gustarse

d. \pr tïa$^{L}$=zía$^{LM}$
\gl like^TIS3
\gl like^TIS1p
\cn li$^{L}$-, lḯ$^{L}$-
\rf tïa$^{LM}$=zía$^{LM}$
\sp gustarse

e. \pr tïa$^{L}$=zïa$^{L}$
\gl like^TIS1s
\cn li$^{L}$-, lḯ$^{L}$-
\rf tïa$^{LM}$=zía$^{LM}$
\sp gustarse

f. \pr tïa$^{L}$=ʔogʔ$^{LM}$
\gl like^TIS2
\cn li$^{L}$, lḯ$^{L}$-
\rf tïa$^{LM}$=zía$^{LM}$
\sp gustarse

**Consistent glossing.** A further accommodation to the interlinearization task is required in the database because of a desire to gloss morphemes consistently, throughout a text. That is, it seems desirable to us to always gloss a word like **ʔma$^{M}$** 'wood, tree' either as 'wood' or as 'tree' in the gloss line of a text, allowing the free translation to render something idiomatic to the context, rather than to burden the gloss line with idiomatic or otherwise subtle distinctions. This seems to us especially important for facilitating the use of the interlinearized texts by other linguists who may not control all the niceties of the PC lexicon.

To accomplish this, the English and Spanish gloss fields (\gl, \sp) are only permitted to occur once per database record, unless they have different denotations, such as naming different positions within a verbal paradigm. Additional so-called 'synonymous' glosses beyond the first, in English or Spanish, are placed in fields marked \gl2 and \sp2, respectively. In addition to assuring that the same gloss appears in the gloss line of an interlinearized text for every occurrence of a given word, this also speeds interlinearization by avoiding the need for the analyst to choose from a list of synonyms in a pop-up window every time synonyms are present in the database. So, for example, a record such as (42) will place the gloss 'wood' under **ʔma$^{M}$** in a text without asking the analyst to choose between 'wood' and 'tree'. The analyst then types an appropriate free translation, using the word of choice, in the \ft field, as in (43).

(42) \pr ʔma$^{M}$
\gl wood
\gl2 tree
\ps NI
\sp la madera
\sp2 el árbol

(43) \pr ciʔ$^{LM}$ ʔma$^{M}$ ʔuuʔ$^{LM}$ ha$^{H}$=zi$^{LH}$ kiaʔ$^{LM}$ -za
\gl stand^IIsP3 wood orange outside of^in -3
\ft There is an orange tree standing outside of his house.

**Mediating technical and practical orthographies.** The PC database is trilingual and uses three standard orthographies—the conventional ones of English and Spanish and an Americanist linguistic transcription for Chinantec. For the most part, each of these orthographies occurs in particular fields within the database. The exception is the comment field, which might occasionally contain elements of more than one language.

The bilingual dictionary, on the other hand, will use a practical orthography based on Spanish conventions with additional or redefined symbols for extra PC vowels, consonants, and accentual material. In the process of conferring with Chinantec language associates, or whenever print-outs of the dictionary are required, it is necessary to convert the technical orthography to its practical counterpart through the use of Consistent Changes (CC) software. This can be accomplished in one of two ways.

A CC table may be written to make the 148 appropriate orthographic changes[8] throughout those particular fields which contain only Chinantec data. Or a table may be written which retains existing fields as is, and creates duplicate, practical-orthography fields based upon them. As long as the database is being expanded and corrected through research, any such duplicate fields created in the interim will require periodic updating.

## Conclusion

This report has addressed some of the issues currently being faced in producing a trilingual electronic database and a bilingual hardcopy dictionary for Palantla Chinantec. We have tried to give some insight into the structure of PC for those primarily interested in the linguistic aspects of the language, while at the same time addressing a few of the practical problems we are facing in documenting this structure both for future research by others and for the immediate use of the language community that speaks the language and has provided the data.

## Appendix: The other software

**Encore Fonts™.** The printer and screen fonts being used for the PC lexicography project have been created using SIL Encore Fonts™ which is a library of over 1330 TrueType© symbols, including:

- the complete IPA Library
- all Americanist phonetic symbols
- other phonetic symbols found in the linguistic literature
- a full set of simple and complex tone symbols
- special orthographic symbols from around the world,
- expert glyphs such as true small caps, ligatures, fixed spaces, and superiors,
- many mathematical and decorative symbols.

They are divided into proportionally spaced serif and sanserif versions and a monospaced version—all in regular, bold, italic, and bold-italic styles. EncoreFonts operates under Windows version 3.1 (TrueType©) and comes with TypeCaster™, SIL's new font compiler for Windows, which permits users to customize their own fonts.

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[8] The number is this large because practical and technical orthographies arrange elements differently. For example, į > in, ʃ > ʃn, ęi > ein but after nasal consonants even vowels unmarked for nasal result in changes like ŋiïg > ŋiøng; c > ts but ci > chi, k > c but ki > qui; g > g and u > u but gue > güe; ʟ > $^{1}$, ᴍ > $^{2}$; and so forth.

**Consistent Changes** (CCT). CCT (v7.4, anon 1990) is an SIL electronic search-and-replace program which incorporates sophisticated functions to make it a powerful tool for modifying plain-text files in consistent ways and, especially in lexicography, to refashion them in appropriate ways for transfer between different electronic applications.

**Convert to Word** (CTW). CTW (v1.06, Rintoul 1991) is a program for converting files from other formats to MICROSOFT WORD™ format, converting tagged characters, paragraphs, and divisions to WORD styles. Footnotes, running heads, and divisions are supported, provided that they can be uniquely identified in the input text. A control file can be used to configure the conversion, and define the mapping between input elements (i.e., paragraph and character elements) and WORD styles. The program supports a consistent changes (CC) table to handle orthography changes and to do such things as convert hyphens to nonbreaking hyphens.

**FIESTA.** FIESTA (v4.5, Alsop 1990) builds a database from a text file, providing very fast access to word lists and a concordance of all the words (or morphemes if they are marked) in the text. It will not be used extensively in the PC project, but provides quick search possibilities for locating illustrative sentences from natural text material.

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# CORPUS-BASED LANGUAGE MODELLING FROM A COMPUTATIONAL LEXICAL PERSPECTIVE

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## 1.0 Introduction

In recent years, the dictionary-making process has involved the use of corpus evidence. Since a corpus nowadays is almost always stored in machine-readable form, it becomes necessary to consider how such corpus data (functioning as a lexical resource) is related to a lexical data/knowledge base (functioning as the computational storage of the lexicon). In the first part of this paper, a framework for such lexical acquisition and representation, the Lexical Frame Analysis (LFA), is suggested. This lexicon, as conceived, is viewed as the central unit within which grammatical and lexical information are integrated. In other words, the lexicon is assumed to be the central repository of linguistic knowledge.

The second part of this paper will demonstrate the application of the LFA framework to two small corpora of business English in order to derive such a lexicon (and thus by extension for its incorporation into a lexical database). Owing to constraints of space, I shall limit my discussion to just two specimen entries derived from these corpora, but one can still get a flavour of the type of lexicon envisaged using this framework.

## 2.0 The relationship between a linguistic database and a corpus

The derivation/acquisition of lexical information automatically from machine-readable corpora is not an easy enterprise, given that it is raw text that is dealt with, unlike the semi-formal representation codes already existing in, say, the machine-readable dictionary (henceforth, MRD) version of LDOCE (cf Procter 1978), which makes it more amenable to exploitation (cf Boguraev & Briscoe, 1989). Lexical acquisition (from unrestricted text) is, however, emerging as a serious focus of computational research (cf. Zernik, 1991).

The instances of words or phrases in a corpus, subjected to corpus processing to yield lexico-grammatical information, may be used to interface with a lexical database in order to create as well as update the database from time to time. Formulated in this manner, the issue becomes one of seeing how a corpus can create or augment a lexical database (which stores the lexicon). In this connection, one notes Leech (1987) whereby the cyclic conception of the relationship between a linguistic database and a corpus can be seen. Figure 1 shows **A** representing corpus data which is then processed in order to create/enhance **B**, the linguistic database, which in turn enhances the NLP system, **C**, itself seeking to improve the system's performance by processing new data in order to enhance the database.

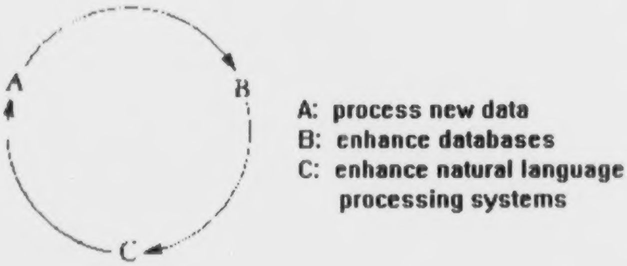

Fig 1: The relationship between a linguistic database and a corpus (Leech 1987:15)

The conceived database could contain information of the sort described by Beale (1987) where accessible frequency data in respect of grammatical tags, individual word forms and their collocations are provided. Although a linguistic database and a corpus can be regarded as independent in principle, in practice 'any system for processing of a large amount of NL [natural language] text data must make use of a substantial linguistic database of one kind or other' (Leech, 1987:14). For Leech, the close relationship between a linguistic database and a corpus is seen especially in probabilistic systems where 'the frequency data derived from corpora are virtually indispensable for system updating and enhancement' of the database (Leech, 1987:15).

More recently, Leech & Fligelstone (1992:123) assert that a lexical database of the sort postulated would be one 'adapted for both humans and machines as users: a lexicon [sic, presumably a "system"] which is capable of parsing unrestricted natural language text is bound to need an extremely detailed lexicon, which itself has to draw upon corpus data as an authoritative warranty for its definitions, its sense distinctions, its ordering of senses by frequency, and other types of lexical information.' How such a lexical database can be adapted for both 'humans and machines' is not made quite clear, since printed dictionaries made for human consumption tend to be at the expense of machine-use. Indeed, the motivation for the creation of the data/knowledge base is perhaps one in which machine-use takes precedence over human consumption.

The notion of lexical data/knowledge base may also be seen as one which involves the issue of the representation of linguistic/lexical knowledge. Formulated in this manner, the lexical database can then be viewed in terms of - to borrow a concept from knowledge-based systems - its **conceptual** and **computational** structures (cf. Kim 1991:129). A conceptual structure is a format suitable for humans to understand, whereas a computational or software structure is one more appropriate for computers. So, the nature of **B** (as indicated in Leech's figure) may be viewed as follows (see Figure 2):

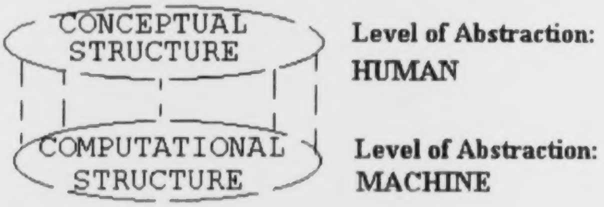

Fig 2 Representation phase of a lexical database, viewed from two abstractions: human and computer implementation

The computational structure is an explicit structure which directly reflects the conceptual structure; in turn, the conceptual structure of the lexical data/knowledge base may be viewed as a 'theoretical linguist's dictionary' from which the lexicographer can utilise various knowledge structures in order to produce, say, a Dictionary of Advanced Learner's Business English (assuming of course that the lexical data/knowledge base concerned is geared towards such a variety of English).

I interpret the phase **B** --> **C** as one in which various **virtual lexicons** can be extracted, as and when necessary, for the data/knowledge base for the specific application purpose concerned (e.g. to enhance the lexical component of the NLP system).

Let us now turn to the phase **A** --> **B**, which I interpret as one concerning the acquisition of lexical knowledge from a corpus. The basic idea in this phase is to derive lexical information from a corpus and integrate it in as automatic a manner as possible into the lexical database. The prospect of processing the corpus is not so much a matter of 'reinventing the wheel' (by not utilising the MRD as lexical resource) but as a complement to the utilisation of the MRD in order to identify important lexical information. This is necessary because existing MRDs, although largely reliable, lack comprehensive lexical coverage and accuracy: Boguraev and Briscoe (1989:34) themselves point out that 'LDOCE [cf. Procter 1978] is by no means the only example of a not fully reliable dictionary source'.

For this reason, Boguraev et al (1989) are unnecessarily restrictive when they define a lexical database only as 'a highly structured isomorph of a published dictionary, which, by virtue of having both its data and structure made fully explicit, lend themselves [sic, "lends itself"] to flexible querying'. Rather, a published dictionary on printed paper, or indeed CD-ROM, should be regarded as the isomorph of a lexical database, not the other way round. The lexical database has the potential 'to update and maintain dictionaries and check [coherence] within a dictionary or across related dictionaries, as well as enable the exchange and sharing of information among projects and even the automatic generation of several printed versions of a dictionary (e.g., a full version, a concise version and a pocket version)' (Ide & Veronis, 1992:145).

In summary, the steps in what is known as the 'cycle of reusability' may be a more complex picture than the one postulated by Leech (1987). I therefore see the situation as approximating more to the one schematically represented in Figure 3.

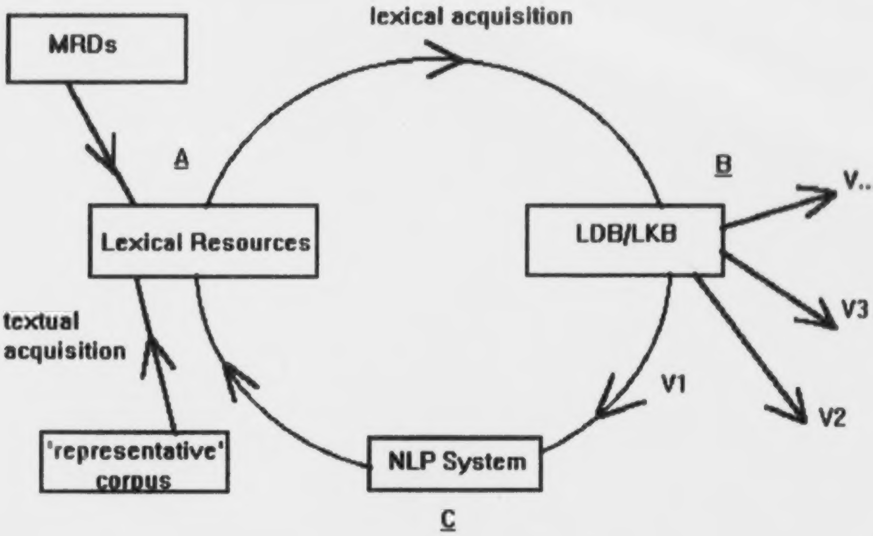

Fig. 3 The cycle of reusability: aspects of the relationship between a linguistic database and the corpus as a lexical resource

Aspects of Figure 3 include the following. **A** is interpreted as representing (filtered) lexical resource data of which the two main existing sources are machine-readable dictionaries (MRDs) and machine-readable texts (MRTs). Where MRTs are concerned, **textual/corpus acquisition** takes place when a representative corpus (in contrast to an 'archive') is acquired from the process of corpus compilation and design: the objective of textual acquisition is to acquire representative texts, otherwise the corpus is unreliable as a resource for the acquisition of lexical knowledge. **Lexical acquisition** (the process of populating a lexicon) then takes place through the application of such techniques as the ones adopted in the Lexical Frame Analysis model. The created lexicon is stored in **B**, the lexical data/knowledge base (LDB/LKB), which is intended to be multifunctional in the sense that various virtual lexicons (V1, V2, V3, ....etc) can be created from it as and when necessary. The construction of such a multifunctional resource will allow different NLP systems and human users such as lexicographers and linguists to extract - with appropriate interfaces - relevant lexical information. Enhancement of the lexical component of the NLP system, **C**, in turn means the system's improved ability to analyse new data (say, a more powerful parser) and the eventual enhancement of the database (by means of, say, an improvement in lexical acquisition methods which makes use of parsing) in this cycle of reusability.

## 3.0 Semi-automatic lexical acquisition & the LFA Framework

In terms of computational tools for deriving such a lexicon, **semi-automatic lexical acquisition** constitutes the immediate practical choice which balances the labour intensive nature of manual acquisition (i.e. crafting the lexicon entirely by hand) against the developing nature of fully automatic lexical acquisition (see Zernik 1991). By semi-automatic lexical acquisition, I mean the utilisation of existing corpus tools (within an integrated linguist/lexicographer's workbench) which allow such processing as word annotation (part-of-speech-labelling), parsing, semantic & pragmatic tagging/parsing, lemmatization, collocational analysis, sense disambiguation, and link to lexical database (see Atkins et al 1992:3-4 for a more detailed treatment).

These corpus-based lexical resources for lexical acquisition should facilitate the integration of the instantiations of the word and the company it keeps in the corpus with a structured lexical data/knowledge base system, which records the various levels of linguistic information about the word. These levels are specified, at the conceptual level of representation, by what I call a Lexical Frame Analysis (or LFA), using attribute:value notation.

The need for the LFA arises partly because corpus processing techniques are underdeveloped for abstract levels of analysis. As a preliminary step towards specifying what this abstract level of analysis should be like when the necessary tool is developed, I have sought to specify a framework for lexicographically encoding corpus data using the following principles:

(1) The lexicon is the repository of linguistic knowledge, and so any analysis of language should take the word/lexeme as the central unit within which

grammatical and lexical information are integrated. This gives rise to various levels of linguistic information used to describe the word: (phonological - in the case of speech), morphological, collocational, syntactic, semantic, and pragmatic;

(2) This linguistic information is described using categories that may be regarded as common (as far as possible) to varied linguistic theories. And even if the exact order of any of these categories remains controversial, the consensual point is that these facts have to be recorded in any lexicon of general application. Therefore, Quirk et al (1985), by virtue of their (arguably) neutral metalanguage for linguistic description, might be useful as a starting point for the description of such categories;

(3) Although linguistic and cognitive structures have their respective distinctiveness, I take the view that they are not dissimilar, unless proven otherwise. Moreover, linguistic knowledge may be viewed as declarative knowledge (as contrasted with procedural knowledge);

(4) Equally, a complementary view is that the lexicogrammar may also be viewed as inherently probabilistic: such statistical information as raw frequency counts should therefore be recorded as facts in the lexicon;

(5) Lexicographic information can be most comprehensively derived from the observation of language in use, i.e. from corpus data, as far as possible, and this can be supplemented by introspection and other sources (such as MRDs);

(6) Keeping in mind the distinction between a general language and a sublanguage, priority should be given to sublanguage lexical acquisition, since this approach offers the advantage of easier lexical sense disambiguation than can be obtained from general language corpora. A sublanguage corpus is a good resource for lexical knowledge acquisition and provides a means for the description of the sublanguage concerned;

(7) Lexical knowledge is derived from analysing how words are used. In order to derive this knowledge, a corpus is to be processed using available tools (which could eventually form a linguist's workbench);

(8) To economize on human resources, the processing is to be done in as automatic a manner as possible. However, for a small corpus, existing automatic methods of lexical acquisition, which rely on statistical methods, cannot be applied because the statistics are unreliable for small bodies of data. So, human intervention is inevitable. Human intervention also serves, in initial exploratory stages, to ensure that the tools have been appropriately applied;

(9) A lexical frame (using attribute:value notation) is used as the basic data structure for the lexical entry. The frame is structured through a combination of 'letting' the processed data suggest what these types of frames should be and specifying a sufficiently abstract level of analysis;

(10) As in the present case, a small corpus whose linguistic coverage might not be adequate may be complemented by a similar one which serves as a control and which helps to extend the linguistic coverage and accuracy of the sublanguage lexeme description in the first corpus.

### 4.0 The PROLEX & PROCOMPARE Corpora as lexical data

The present demonstration of this proposed framework in practice for the derivation of a corpus-based lexicon utilizes data from both the PRO(fessional) LEX(is) Corpus of naturally-occurring business English texts (cf Webster 1984) and another similar corpus which I call the PROCOMPARE Corpus (available through shareware). The PROCOMPARE Corpus is used both as comparison and control for the PROLEX Corpus.

The PROLEX Corpus represents a collection of 566 samples of business English correspondence during the period 1983-84. The data was sampled from a well-defined sampling frame, i.e. a collection of business English texts gathered from business sources including multi-national corporations, banks and hotels which actually 'produce' this type of English. This text base stands at c.60000 words and, for demonstration purposes, might be viewed as somewhat 'representative' of language of business English, although one wishes for a much larger text base. Text 1 contains a sample PROLEX text in which the lexeme *account* occurs:

Text 1

> *Dear Sir*
>
> *You may have overlooked our statements and earlier reminder requesting for settlement of your account which is now considerably past due.*
>
> *Please note that our credit policy requires all statements be paid in full within 30 days on presentation. May we hear from you by return mail within the next ten days.*
>
> *Thanking you in advance for your prompt attention.*
>
> *Yours sincerely*

Similarly, Text 2 gives a flavour of the type of the text found in the PROCOMPARE Corpus for the same lexeme:

Text 2

> *Dear*
>
> *Would you believe that we simply detest writing letters such as this one? We know that you certainly can't enjoy hearing from us under these circumstances.*
>
> *I am, of course, referring to the fact that your account has fallen very far behind.*
>
> *We want you to remain a customer of ours, to continue to buy our merchandise, and to know when we are planning an outstanding sale.*
>
> *What do you say? Can we hear from you today?*
>
> *We are so anxious that we even placed a stamp on the envelope for your remittance.*
>
> *If you are unable to send us the payment, please give me a call at the above telephone number. Thank you.*

Text 2 may strike one humorously as purporting to be a 'boilerplate', a template, as it were, which suggests (perhaps in a simplistic way) that all that is required for being a successful Business English writer is to customise such a text by just filling in the blank spaces provided. Indeed, while the PROCOMPARE collection is loosely called a 'corpus', it actually represents the following, found in ***The Shareware Book (PC-Shareware Magazine*** supplement, 1992):

> Over 600 sample business letters and legal forms are included for your boilerplating. All are in plain ASCII text for inclusion and customisation in your word processor. Most are quite short. Includes Accounting, Business, Legal, Employee, Product order, Sales letters, and some common forms. A complete index is also provided.
>
> (p.28)

At first sight, this purports to be a model of how the various subparts of Business communication take place: following Fillmore (1985), presumably these are frames which purport to provide a range of stereotypes, scenarios, of how Business English works. Very little is known of the source of the PROCOMPARE texts, apart from the publisher's blurb that has been noted. This corpus, like PROLEX, consists of approximately 60 000 words.

## 5.0 Deriving a lexicon of business English

The integration of the instances of words/phrases in a corpus with a structured lexical database which records morphological, syntactic, semantic, and pragmatic information about these words is represented by the lexical acquisition process. This lexical acquisition process, in turn, is such that the lexicon is specified at an adequately abstract level of analysis for representation in the lexical/data knowledge base (which represents the computational storage of the lexicon).

In this connection, Appendix 1 shows a specimen PROLEX lexical entry for *account*. This lexeme, occurring 103 times in the corpus, is structured using the general idea of a linguistic/lexical frame (cf Minsky, 1975), and whose attribute-value formalism is not unlike that of PATR (cf Shieber 1986) and DATR (Evans & Gazdar 1990). Conceptually, the word is a universe (as it were) in itself: a word may be regarded as 'a text in microcosm, a "universe of discourse" of its own in which the semiotic properties of a text reappear on a miniature scale' (Halliday, 1981:44).

Thus, I have structured four general frames for this word. Of course, the specification for such frames varies for different parts of speech. Other frames have been structured for the other categories - verb, adjective, adverb - but they will not be detailed here, and the frames apply only to the noun lexeme. Under the MORPHOLOGY_FRAME, both inflectional and derivational morphology are accounted for: *account* occurs 91 and 12 times as singular and plural noun respectively; related wordforms include *accountant*, *accountee*, and *accounting*. This information is derived automatically by running the well-known CLAWS program (cf Garside et al 1987) on the PROLEX texts, for which the output is enclosed in square brackets. Under the SYNTAX_FRAME, if *account* is treated as the head of the noun phrase, then various pre and post-modifying elements are realised. These elements have their respective form and function (as indicated by 'form' and 'feats'). As a noun, *account* also collocates with other nouns, verbs, and prepositions. The SEMANTICS_FRAME indicates that there are two senses of the wordform in the corpus, each lexeme taking its respective argument structure. The PRAGMATICS_FRAME indicates the contextual situation associated with *account*.

A similar lexical frame obtains for the PROCOMPARE lexeme *account*, which occurs 211 times in the corpus. Generally, the two corpora compare well in the range of collocates associated with *account*. However, while the PROLEX Corpus uses a term such as *current account*, the equivalent American term *checking account* is present in the PROCOMPARE Corpus, indicating the British and American varieties that these two corpora reflect respectively. Collocations form a very important aspect of the lexicon: indeed a register/sublanguage may be said to be defined, in part at least, by the choice of the collocations used. With *account*, the occurrence of such attributive terms as *brief* and *full* indicates a more general language in use (i.e. where *account* here has the sense of 'description') and invite the prediction that these collocations do not tend to co-occur with *account* in business English especially relating to banking. This is because, in the business world, a semblance of objectivity is maintained, and such subjective epithets would be inappropriate.

In these two corpora, notice that the realized forms and their respective functions are ordered in terms of their frequency of occurrence. Thus, in a noun phrase having *account* as the head element, there is a very strong tendency for the determiner to be realised by "your", as in "your outstanding account". This is shown in the PROLEX Corpus in which "your" occurs 26 times and in the PROCOMPARE Corpus in which the term occurs 80 times. The preference for such a structure shows how important a corpus-based methodology can be in revealing patterns of language use in the sublanguage concerned and which leads to a description and modelling of this type of language. This is especially true when the dataset is expanded to a much larger extent than is shown here, but the size of both the corpora concerned will do for the present purpose.

The foregoing comments concerning the choice of the determiner (be it "your", "our", "the" etc.) in the noun phrase in which *account* acts as the head element does, trivial though it may seem, constitute significant information for the lexicographer to record for learners of business English. Equally important for the learner of business English is that this lexeme cooccurs with such preposed elements as "(your / our / the) charge / current / overdue (account)" as well as postposed elements such as "(account) balance / receivable / payable" - the list goes on.

Where the SEMANTICS_FRAME is concerned, there are two main senses associated with this noun in the two business English corpora. The first relates to a detailed record of transactions between debtor and creditor, and the second is related to banking. Taking into account both senses, however, the definition of *account* in these two corpora may be said to include a record of the transactions of the money paid or owed between an institution and a customer (the 'account-holder') which the two parties concerned agree to maintain in an equilibrium state. Although the data obliges the generalisation that it is the institution which maintains this equilibrium by communication with the holder of the account, there is no reason why the holder cannot initiate the discourse (as when one writes to one's bank manager).

A major difference between the related concepts of ACCOUNT and RECORD is that ACCOUNT obliges a strong sense of maintaining this equilibrium, whereas a RECORD is just documentary. Collocative terms such as *settle* and *maintain* point to a desire to reach an equilibrium; on the other hand, the adjectival collocations *outstanding*, *overdue*, *overdrawn*, the associated verb form *settle* and the set phrase *insufficient funds in* point to a state of disequilibrium, and the need for its resolution.

In terms of grammatical features, it is noticeable that both these corpora list *account* as a count noun only, unlike a general English lexical database which lists *account* as having the possibility of both 'count' and 'uncount' features: a general dictionary would of course take into account general senses such as ones associated with the following: *The doctor is a man of some account in the village*, and *You must take into account the boy's long illness* (LDOCE, 1978:6). The point to note here is that the range of senses in a specialised dictionary are reduced dramatically in the sublanguage corpus, and this is reflected in corresponding grammatical restrictions.

Finally, it is significant that in Business English, the noun lemma *account* occurs much more frequently than its verb lemma counterpart. This is because *account* (v) has the different meaning of 'explaining' something, (and is almost always followed by the preposition *for*, which has no specialized use in business correspondence). Therefore, it does not always make good sense to adhere to the blanket principle that the noun is derived from the homonymic verb. The noun and verb senses of *account* are best treated on their own terms.

## 6.0 Wider Implications & Conclusion

A lexicon along the lines I am suggesting aims not only to be frequency informed and ordered (and thus 'preference-based') but also 'theory-neutral' in the sense that this linguistic information is described using categories that may be regarded as common (as far as possible) to varied linguistic theories. And even if the exact order of any of these categories remains controversial, such facts should be recorded in any lexicon of general application.

Such a lexicon should be stored in a format which is computationally tractable as well as being generally accessible. In regard to accessibility, what I have condensed in Figure 3 concerning aspects of the relationship between a linguistic database and a corpus is not programmatic, but is being increasingly realised - witness the Centre for Lexical Information Database at Nijmegen and the more recent availability of the Collins-Birmingham Bank of English through the Internet.

With regard to the actual form of the lexical database to store the lexical entries in, the lexical database system / lexical representation language DATR (cf Evans & Gazdar 1990) running under POPLOG PROLOG is a possible candidate because of its flexibility: owing to constraints of space, no further comments apply here (but see Ooi, 1994).

The wider implications of using the framework I have suggested include investigating aspects of the relationship between a lexicon and a corpus within the context of a convergence of interest between computational linguistics, computational lexicography, and corpus linguistics. A convergence in the lexicon of these three enterprises emerges not only in the context of an eventual need for standardization whereby the computer can help in the reuse of lexical resources more cost-effectively (e.g. Heid & McNaught 1991, McNaught et al 1991) but also in using the computer for the creation of more accurate dictionaries.

From the viewpoint of linguistics, the linguist's contribution to the 'dictionary-making' process can be subdivided into, at least, three roles. Firstly, the theoretical linguist can extend the notion of his/her theoretical dictionary, the lexicon (e.g. Makkai 1980, Hudson 1988). In other words, the theoretical linguist 'creates' such new linguistic knowledge by modelling and describing the behaviour of the word and this knowledge can be selectively disseminated to the learner by the lexicographer. Secondly, the computational linguist can extend the notion of a lexicon by storing it in the computational lexical structure known as the lexical data/knowledge base (e.g. Calzolari & Zampolli 1991). Thirdly, the corpus linguist can extend the notion of the lexicon by basing its description on an appropriate analysis of textual instances (cf Leech, 1987). But why should the linguist take on such agendas? For the theoretical linguist, a richer lexicon represents the creation of new knowledge which can be used and disseminated by the lexicographer in various ways. For the computational linguist, storing the dictionary in a lexical data/knowledge base allows the search for lexical information beyond the perspective of a mere printed dictionary, as well as allowing the creation of various lexicons, as and when needed. For the corpus linguist, basing lexicographical description on 'real' language in use provides a complement to the traditional reliance on introspective lexical knowledge.

Linguistics, computer science, lexicography: hopefully, in its own small way, this paper has indicated that the relation between computers and dictionaries through a convergence of these perspectives becomes an ever-closer one, which invests 'dictionary-making' with a new significance.

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## 8.0 Appendix 1 - Specimen lexical entry for *account*, based on the PROLEX Corpus [Key to notation given at the end of entry]

*********************** Start of entry *************************

**Prolexnoun_LEX** account (103):

**MORPHOLOGY_FRAME:**
**<mor LEX Φ>** = "account (91) [NN1 91]"
**<mor LEX -S>=** "accounts (12) [NN2 12]"
**<mor LEX related_wordforms>=** "accountant (1) [NN1 1], accountee (2) [NN1 2], accounting (2) [JB 1 VVG 1]"

**SYNTAX_FRAME:**
**<syn LEX cat>= N** [X]; **Ndeverbal** []
**<syn LEX N class>= Count** [X]; **Mass** []
**SYN_NP_SUBFRAME:**
**LEX=** H
**<syn pre H det real>=** "your (26), our (10), the (6), {cname's} (5), this (5), the beneficiary's (2), opener's (2), all (1), these (1), a (1), buyer's (1), seller's (1)"
**<syn pre H premod real>=** "current (8), (long) outstanding (5), (considerably) overdue (4), above (2), personal (2), following (2), new (1); posb (2), savings (1), bank (1); head office (1), singapore dollar (1),{cname} branch (1), {cname} osaka (1); issuing bank (1)"
**<syn pre H premod form>=** Adj+LEX (24); N+LEX (4); Ncompound (N+N) + LEX (4); Adj+N+LEX (1)
**<syn post H postmod real>=** "of {cname}(6), of openers (2), of beneficiary (1); with you (2), with the post office savings bank (1), with the sum of ${amt.} (1); which should have been settled a long time ago (1), which is now slightly past due (1), which is now considerably past due (1); represented by

this invoice (2), rendered by our office in {place} and {city} (1); under advice to us (2); covering ${amt.} (1)"
**<syn post H postmod form>=** PP (of) (9) / PP (with) (4) / wh rel clause (3) / -ed clause (3) / PP (under) (2) / -ing clause (1)
**SYN_LEX_COLLOCATE_SUBFRAME:**
**<syn pre LEX noun_colloc real>=** "debit of (3),settlement of (2), balance of (2), funds in (2), credit of (2), statement of (1)"
**<syn pre LEX noun_colloc form>=** N+prep+LEX
**<syn post LEX noun_colloc real>=** "number (17), receivable (4), holders (1)"
**<syn post LEX noun_colloc form>=** Ncompound (LEX + N) (22)
**<syn pre LEX verb_colloc real>=** "debit (6), regarding (3), maintain (2), favouring (2), to credit (1), will be for (1), to debit (1), to settle (1), referring to (1), to clear (1), to close (1)"
**<syn pre LEX verb_colloc form>=** V(transitive)+LEX (20)
**<syn post LEX verb_colloc real>=** "has been debited (2), has been transferred (2), has become overdrawn (1); was credited (2); is (not) settled (2); can be operated (1); is (1)"
**<syn post LEX verb_colloc form>=** LEX+V(perfective) (5) / LEX+V(passive) (4) / LEX + V(modal) (1) / LEX + copula (1)
**<syn post LEX adj_colloc real>=** "((long) overdue) (1)"

**SEMANTICS_FRAME:**
**<sem LEX>** = ACCOUNT (arg01), ACCOUNT2 (arg02)

**PRAGMATICS_FRAME:**
**<prag arg01 structure>=** X settles ACCOUNT (arg01) with Y, where X= SUPPLIER / CNAME1, Y= CUSTOMER / CNAME2; Y (Initiator)-->X (Respondent) permissible
**<prag arg02 structure>=** X settles ACCOUNT (arg01) with Y, where X= BANKER, Y= CUSTOMER; Y (Initiator)-->X (Respondent) permissible
**************************** End of Entry ***********************

Notational Key:

(1) The frame ('attribute:value') notation is used. Let us call the 'attribute' side the left hand side (LHS) and the 'value' side the right hand side (RHS). Let the = sign be 'isa'. Thus given XXX="YYY", it is usually the case that XXX=attribute/slot, and "YYY"=value (the instantiation). However, sometimes it is XXX= <A B C D> where A B C D might be permanent slots, in turn containing values. Within "YYY", frequency data is mainly included, so "YYY (***)" is such that *** stands for some frequency value.

(2) As indicated in (1), the angle brackets < > are used to enclose some particular combination of parameters in that slot. Sometimes, however, because the item in question (on the RHS) is the form which realises a

particular value, I have left it unenclosed in such brackets, e.g. in the case of the lexeme *account*,

**<syn post LEX noun_colloc real>**= "number (17), receivable (4), holders (1)"
**<syn post LEX noun_colloc form>**= Ncompound (LEX+N)

where 'LEX+N' stands for 'the lemma concerned + a noun' to form a noun compound, e.g. *account* receivable, *account* number.

The parameters of information enclosed within the angle brackets are generally mnemonic. Thus, using the same example, this reads as: 'in terms of syntactic information, *account* is a lexeme which collocates with a noun which occurs after it.' Thus, the terms 'pre' and 'post' indicate items to the left and to the right of the lexeme in question respectively.

(3) On the LHS, the abbreviation 'real' stands for 'realisation', which is reflected on the RHS by " " which encloses actual occurrences. In general, on the RHS, these values are ordered by their frequency of occurrence, i.e. the most frequent items come first. Notice that, in the previous example, 'real' occurs before 'form', which is the complement of 'real'.

(4) The numbers in round brackets '( )' stand for the number of occurrences (raw frequency count) of the item in question.

(5) The empty square brackets [] are used in a number of ways. Generally, they stand for the empty set / non-occurrence of the item in question (Sometimes, (0) is used instead, for zero frequency). Sometimes, [] represents an object which is implicit: an instance of this is the implied second person pronoun in the imperative clause "Please advise me". Also, in the CLAWS output (Morphology section), for ease of reading, I have used these square brackets to distinguish them from the round ones.

(6) The curly brackets {} enclose those types of information which maintain the confidentiality of business transactions (a condition for obtaining some of these letters was that the names of some companies may not be disclosed). Thus, for the most part, I have abbreviated names of organisations as {cname}, together with such (self-explanatory) terms as {date} and {city}.

(7) On the LHS, morphological information is enclosed as <mor...>, syntactic information as <syn...>, semantic information as <sem....>, and pragmatic information as <prag...>.

## 9.0 Appendix 2 - Specimen lexical entry for *account*, based on the PROCOMPARE Corpus

******************************Start of Entry**********************
**Procomparenoun_LEX** account (211):

**MORPHOLOGY_FRAME:**
**<mor LEX Φ> =** "account (183) [NN1 183]"
**<mor LEX -S>=** "accounts (28) [NN2 28]"
**<mor LEX related_wordforms>=**"account (2) [VV0 2]; accounts (3) [VVZ 3]; accountant (1) [NN1 1]; accountants (2) [NN2 2]; accounting (11) [JJ 8 NN1 2 VVG 1]"

**SYNTAX_FRAME:**
**<syn LEX cat> = N** [X]; **Ndeverbal []**
**<syn LEX N class>= Count** [X]; **Mass []**
**SYN_NP_SUBFRAME:**
**LEX=**H
**<syn pre H det real>=**"your (80), the (13), our (11), an (9), my (7), a (5), the customer's (1), any (1), this (11), every (1), her (1), their (1)"
**<syn pre H premod real>=** "charge (9), (regular) open (8), new (6), overdue (4), (past) due (3), said (2), current (2), complete (1), checking (1), credit (1), valued (1), own (1), above captioned (1), aging (1), specific (1), disputed (1), valued (1); expense (3), savings (3), loan (2), claims (1), installment (1); following unpaid (1), above referenced (1)"
**<syn pre H premod form>=** adj+LEX(44); N+LEX(10); adj+adj+LEX(2)
**<syn post H postmod real>=**"with us (5), with you (2), with our company (1), with our firm (1), with our store (1), with your establishment (1) with a substantial deposit i had made several days prior (1), with your company (1); in the amount of ${amt.} (4), in [locale] (1); of ${amt.} (2), of {name} (1); for you (1), for your company (1); which bears a similar name to yours (1), that has become seriously past due (1), held in the name of {name} with {cname} (1); closed (1); falling more than 30 days behind (1)"
**<syn post H postmod form>=** PP(with) (13) / PP(in) (5) / PP(of) (3) / PP(for) (2) / wh rel clause (3) / ed-clause (1) / -ing clause (1)
**SYN_LEX_COLLOCATE_SUBFRAME:**
**<syn pre LEX noun_colloc real>=**"statement of (4), payment on (3), review of (3), payment of (3), credit limit on (2), assignment of (2), past due charges on (2), balance in (2), surcharge on (1), adjustment in (1), convenience of (1), credit limit on (1), name and address on (1), use of (1), information about (1), terms and conditions of (1), liens on (1), instructions on (1), payment from (1), credit to (1), credit on (1), record of (1), change in (1), past due balance on (1), extension of credit on (1), past due balance of (1), balance on (1), notice of (1), notice to (1), status of (1), type of (1), settlement of (1), amount (owed) on (1), placing of (1)"

**<syn pre LEX noun_colloc form>=** N+prep+LEX
**<syn post LEX noun_colloc real>=** "balance (6), receivable (5),payable (2), number (4), terms (3), name (3), status (3), statement (2), credit (1), debtor (1), basis (1), analysis (1), inventory (1), representatives (1)"
**<syn post LEX noun_colloc form>=** Ncompound (LEX +N)
**<syn pre LEX verb_colloc real>=**"opening (5), regarding (5), credited to (3), handling (1), failed to credit (1), credit (4), open (5), use (1), have (1), have reviewed (1), to pay (1), failed to bring (1), turn...LEX...over (3), settle (3), refer (1), indicating (1), adjust (1), deposited to (1), service (1), crediting of (1), handle (1), glancing over (1), discuss (1), having (1), reevaluate (1), bring...LEX.....up (1), maintaining (1), cleared from (1), review (1), close (1), clear (1), deposit (1), maintain (1), to getting....LEX....back (1), welcome (1), to forward (1)"
**<syn pre LEX verb_colloc form>=** V(transitive)+LEX
**<syn post LEX verb_colloc real>=** " has been opened (2), has fallen (seriously behind) (2), had been paid (2), has been credited (1), has been approved (1), has reached (1), has been referred (1); is held (2), is paid (1), is renewed (1), is sold (1), be maintained (1), is evaluated (1); does not make (full payment) (1), may be retransferred (1); is (6), exceeds (1),carries (a past due balance) (1),"
**<syn post LEX verb_colloc form>=** V(perfective) (10) / V(passive) (7); V(modal) (2) / V (copula) (6) / V(finite) (2)
**<syn post LEX adj_colloc real>=** (seriously) past due (3), current (1), overdue (1)

**SEMANTICS_FRAME:**
**<sem LEX>** = ACCOUNT (arg01), ACCOUNT2 (arg02)

**PRAGMATICS_FRAME:**
**<prag arg01 structure>=** X settles ACCOUNT (arg01) with Y, where X=SUPPLIER, Y=CUSTOMER; Y (Initiator)-->X (Respondent) permissible
**<prag arg02 structure>=** X settles ACCOUNT (arg01) with Y, where X=BANKER, Y=CUSTOMER; Y (Initiator)-->X (Respondent) permissible
**************************End of Entry*************************

# IX

# LANGUAGE ACQUISITION

# SECOND LANGUAGE LEXICAL ERRORS: PRODUCTION AND RECOGNITION

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## BACKGROUND, FOCUS AND METHODOLOGY OF STUDY

This study was designed to look at lexical acquisition among L2 English learners in college-level ESL classes, an aspect of second language acquisition that, for the most part, has been overlooked in second language research (see Blum and Levenston, 1979 and Levenston, 1979). A major focus of the study was a working out of a typology of the lexical errors that ESL learners make. Tied into this typology is our conception of how word meanings are learned and represented in the mind. One essential aspect of this conception is that word meanings have internal structure made up of component concepts along the lines of Katz's semantic theory (1972, 1979). So an important focus of our study is to test this general conception of the nature of word meanings and its application to second language lexical acquisition.

In-class compositions of students at three competency levels in English--high-beginner (the lowest level taught at Kingsborough Community College of the City University of New York where the study was conducted), low-intermediate level, and high-intermediate level--were read and lexical errors were noted. The lexical errors were studied and a preliminary typology of errors was devised to accommodate the errors found. Then, based on the errors in several hundred compositions, two tests, a production and a recognition test, were created. Eighty-seven students from the three ESL levels took both tests: thirty-three at the lowest level, twenty-four at the middle level, and thirty at the highest level.

The production test, a cloze test, consisted of a narrative with the blank spaces requiring the focus words. It was expected that some students would fill in the focus word, some the expected error word, and others would choose other vocabulary items, both correct and incorrect. There were twenty-one items on the cloze test. The recognition test consisted of eighty-one sentences, some correct and some with error words. Students were asked to judge the recognition sentences for correctness of vocabulary words. They were told that there were no grammatical errors in the sentences, only vocabulary errors. Students were asked to check boxes marked "correct," "incorrect," and "undecided." If they checked "incorrect," they were told to underline the word that they thought was used inappropriately.

The subjects came from various language backgrounds, but most of them were French and Haitian Creole speakers (thirty-one), and Spanish speakers (twenty-two). Other languages included Russian, Arabic, Hebrew, Hindi, Cantonese and Mandarin Chinese. All students who participated in the study answered questions about themselves that served as independent variables which were used in the study. These variables included years in the United States and years studying English in the United States. As we will see, these variables had little or no bearing on how students performed on the two tests, whereas English competency level did play a role.

Cloze test responses were rated by five judges on a scale of one to four, four being a correct response for a particular context, one an unintelligible response, and two and three assigned to items depending on their closeness to the target word. Blank spaces had a score of zero. The weighted scores were computed by taking the means of the scores assigned by the judges for each response. The score on a student's cloze test was just the sum of the scores so assigned for each of the twenty-one items on the test: the highest possible score on this test was eighty-four.

The score for each item on the recognition task was assigned by giving a score of four to a correct item checked "correct" and to an incorrect item checked "incorrect" with the focus word underlined. A score of two was given to incorrect items checked "incorrect" but with no word or an inappropriate word underlined. Blanks and "undecideds" got no points, but wrong answers got one point. This type of scoring was used for the recognition task so that it would correspond most closely to scoring for the cloze task. The tables in this study use percentage scores to facilitate comparison.

## TYPOLOGY OF ERRORS

The major categories in the typology of errors are as follows:

I. Semantic feature errors: within-word
  A. specific -> specific domain errors
  B. specific -> general domain errors
  C. general -> specific domain errors
  D. antonymy: contradictoriness

II. Semantic feature errors: between words
  A. semantic selection restriction errors
  B. converseness errors
  C. redundancy errors
  D. preposition errors

III. Discourse context errors
  A. usage errors
  B. register errors

The categories outlined here can account for all meaning-related errors of second language learners without appeal to the learners' first language (see Dulay and Burt, 1983; Krashen, 1983; Selinker, 1983; and Gass and Selinker, 1994). This does not negate, however, that there may be a transfer effect as well, particularly in the earlier stages of L2 acquisition, and some errors might be influenced by a learner's L1 (see Kellerman, 1983; Ringbom, 1983; Zobl, 1980; and Taylor, 1975). Such errors are classified in the typology also, but not as transfer errors.

One transfer-type error is split, which occurs when one word in the L1 has at least two senses which correspond to the meanings of two different words in the second language, as with Spanish "hacer" and French "faire," both of which have at least two senses corresponding to the meanings of English "make" and "do." It is interesting to note, however, that even in L1s that show no evidence of having this one-to-two equivalence relationship with English for these words, learners may confuse "make" and "do," and so these errors also need to be explained without appeal to the first language.

Semantic feature within-word errors are those error words which are closely related in meaning to the target word with most meaning-related components of target and error word being the same (see Carey, 1982 and Katz, 1972 and 1979 for a discussion of compositionality). Errors in IA involve an incorrect word with a specific meaning when another word with an equally specific meaning is needed. IB errors are those in which a word with a specific meaning is used for a more general or superordinate target word. IC errors occur when a learner uses a word with fewer semantic components (more general) for a word with a greater number of semantic components (more specific).

An example of a within-word semantic feature error is: (1) *She doesn't want to grow up her children in the city. In this case, the more general non-causative word with fewer features is used for its more specific causative counterpart: "raise," the required word, means "cause to grow up" and therefore has the added causation component ( see Bowerman, 1980).

Between-word semantic feature errors also deal with semantic components that make up the meaning of a word, but concern the relationship of a word to other words with which it forms phrases or constituents in a sentence. Some preposition errors fall into this category, for example, (2) *She doesn't want to send her children in the city. "Send" requires an allative, or preposition of direction such as "to" rather than the locative "in" which is given in this sentence which appears in the cloze test. These errors involving prepositions are therefore meaning-related.

Those error words which have the same abstract meanings as the target words, yet are judged (by the judges, who were native speakers of American English) to be deviant in the context in which they are used, fall into the category of discourse-context errors. Semantic features of error word and target word are the same, but the pragmatic components--those dealing with word use--are not. For example, in (3) *I have to decide how to pass the weekend, "pass" has a more poetic register than the more suitable and more ordinary "spend."

## DISCUSSION OF SOME PRELIMINARY RESULTS

Surprisingly, students on the whole do better on the cloze test than they do on the recognition test, as we can see from tables one and two. The mean percentage score for all students for the cloze is 79.5567 and for the recognition, 68.1567. This seems to suggest that the ability to spot semantic deviance develops more slowly than a student's ability to find a semantically appropriate word to complete a sentence. The better performance on the cloze task might also be due to a learning strategy, particularly among least advanced English learners that generally assumes that all input in the second language is meaningful. Students might find it difficult to suppress this strategy even when they are told that some of the sentences are semantically deviant.

## Cloze Scores; Table 1

Three Variables (Pop. Mean=79.5567, Std Dev=10.9737)

| Indepen. Vars. | 1 | 2 | 3 | Signif. | F Score |
|---|---|---|---|---|---|
| *USA Yrs | 80.1927 | 78.0952 | 80.0414 | 0.7183 | 0.3323 |
| *English Yrs | 77.1364 | 79.3810 | 82.5397 | 0.3545 | 1.0524 |
| Level | 75.2886 | 83.6210 | 81.000 | 0.0107 | 4.7895 |

*1 means <= 1 yr.; 2 means <=4 yrs. but >1 yr.; 3 means > 4 yrs; 5 missing
Scores are Percent Scores

## Recognition Scores; Table 2

Four Variables (Pop. Mean=68.1567, Std Dev 7.6713)

| Indepen. Vars. | 1 | 2 | 3 | Signif. | F Score |
|---|---|---|---|---|---|
| *USA Yrs. | 68.8713 | 66.5367 | 69.0955 | 0.3568 | 1.0442 |
| *English Yrs. | 67.8011 | 66.8025 | 69.6759 | 0.5867 | 0.5372 |
| Level | 65.9559 | 71.4378 | 67.9527 | 0.0264 | 3.7956 |
| **Cluster | 58.9506 | 68.8722 | 70.1469 | 0.0001 | 10.1746 |

*1 means <= 1 yr.; 2 means <=4 yrs. but >1 yr.; 3 means > 4 yrs; 5 missing
**Clusters determined by Cloze Test Scores
Scores are Percent Scores

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Let us now consider these results more closely. Seventy-eight of the eighty-seven students tested, or 90 percent, had better cloze than recognition scores. We have already offered some explanation for better cloze scores, but can we find any commonalities among those nine students who did better on the recognition test? Five of them, or 83 percent, had cloze scores between 43 and 56 percent, the lowest in the sample. One other had a score below 65 percent, two had scores in the seventies, and one had a score of 80 percent (with a recognition of 80.86--hardly any difference).

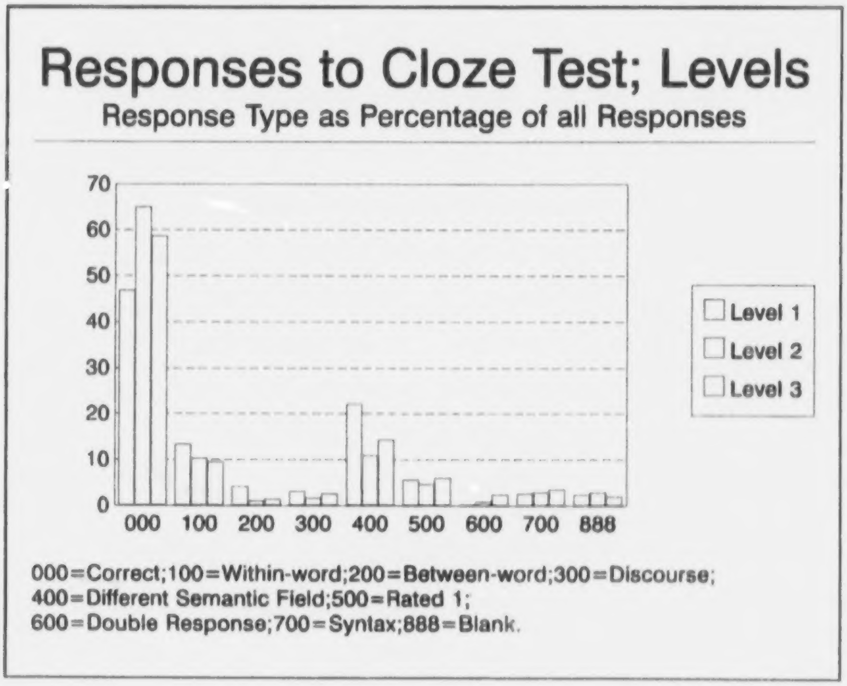
One reason for this might be that these students had so little flexibility with the language because of the paucity of lexical items at their disposal that it was difficult for them to supply a correct or near-correct word on the cloze test, even in instances where the context was clear to them. Also, since many responses were rated one, students' knowledge of written English might have been so limited as to impede their understanding of the narrative.

The overwhelming majority of students had lower scores on the recognition test. We might think that this might have been due to the nature of the test itself: although it might be fairly easy for students to mark items correct--a one-step operation with a 50 percent chance of a correct response--it is more difficult to mark an item incorrect since this involves underlining the error word in order to get a perfect score. Many sentences on the recognition were incorrect. In addition, the weighted scoring on the cloze test allows for a wider range of partial credit.

But after considering all of these factors, we still have to account for the comparatively poor performance of subjects dealing with the incorrect items on the recognition test: the 29 students whose mean cloze score was 89 percent had a score of only 62 percent on the incorrect items on the recognition test. In fact, these same students had a mean score of only 79 percent on the correct items on the recognition test. These results suggest that the better performance on the production test is not just an artefact of the testing procedure but is indicative of a more slowly developing ability to distinguish between semantic wellformedness and semantic deviance due to choices of lexical items.

Another interesting result is that although level two students do quite a bit better than level one students on both tests as was expected, they also do better than level three students. The same effect can be seen in the recognition test scores. What can account for these results? This might just show that the English proficiency level assigned to these students is not reliable, or it might reflect some other aspects of the vocabulary acquisition process. One possibility is that students in the middle level might be willing to take greater risks than students in the first and third levels. In any event, as we can see from the cloze and recognition tables, English level does seem to play a more significant role in acquisition of vocabulary than do years in the United States or years studying English in the United States.

Turning to the bar charts that display the distribution of response types on the cloze test, with respect to proficiency level, we again see that the second level students have the highest number of correct answers (coded 000), about 65 percent, with the level one students getting about 47 percent correct, and the level three students about 58 percent. The second of the two bar charts uses a cluster analysis of the students' cloze scores that divided them into three clusters: ten students had cloze scores with a mean of 55 percent, 48


Responses to Cloze Test; Levels

Response Type as Percentage of all Responses

000=Correct;100=Within-word;200=Between-word;300=Discourse;
400=Different Semantic Field;500=Rated 1;
600=Double Response;700=Syntax;888=Blank.

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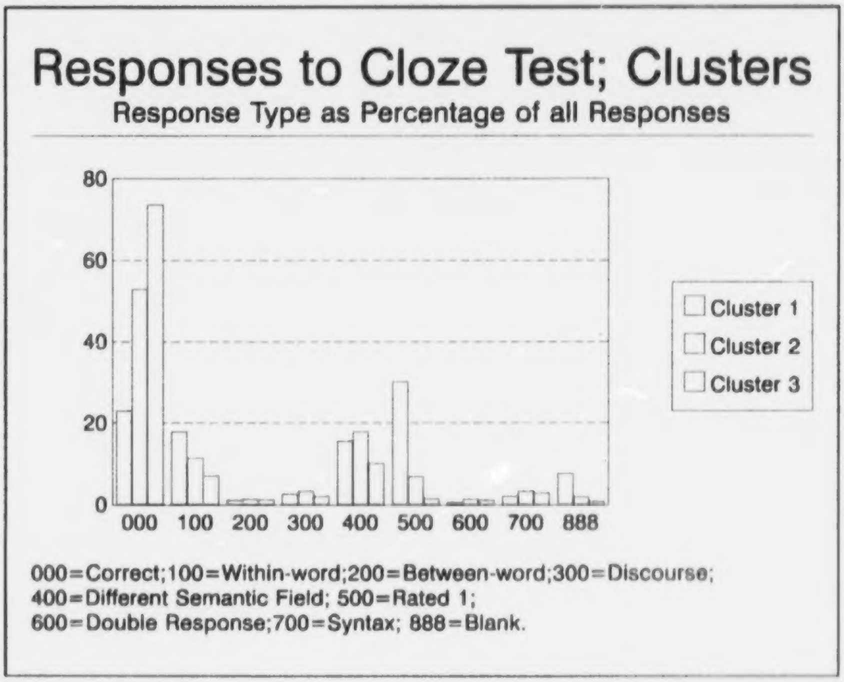
had scores with a mean of 79 percent, and 29 had scores with a mean of 89 percent. A subject's score relative to these three clusters might give a more objective and accurate measure of lexical proficiency than the placement level, which was based partly on holistic readings of student compositions.



000=Correct;100=Within-word;200=Between-word;300=Discourse;
400=Different Semantic Field; 500=Rated 1;
600=Double Response;700=Syntax; 888=Blank.

One significant trend that emerges from looking at these two bar charts is that the percentage of within-word lexical errors, those errors having to do with the internal conceptual structures of word meanings, decreases from levels one to two to three, and that this trend is even more pronounced on the clusters bar chart; moreover, this trend is statistically highly significant ($p < .0001$). This indicates that as second language students become more proficient with the lexicon, they build up the internal conceptual structures of the meanings of their second language words. This result lends support to the overall conception of our typology of within-word, between-word, and discourse errors.

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# A RECONSIDERATION OF THE APPLICATIONS OF THE MONITOR IN SECOND LANGUAGE LEARNING

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## Introduction

One of the most influential proposals in L2 learning has been the Monitor model formulated by Krashen (1981, 1982; Krashen & Terrell 1983). Krashen conceives of learning as the conscious knowledge of an L2 (also referred to as grammar), to be used as a "monitor" to correct errors in one's output. The role of learning as the Monitor is a very narrow conception - one that leads to an inaccurate understanding of L2 learning and consequently, undesirable pedagogical effects. This paper reconceptualizes the monitor (small "m") and proposes that learning and the monitor apply not only to grammar, but to other categories related to language learning including (a) lexis and phonology, (b) text structure, genre, register, and mode, (c) learner strategy, (d) culture, power and ideology. Each of these applications is described and discussed with respect to the monitor. A dynamic model is devised to represent the relationships of these categories and also to show how they interact.

Krashen's hypothesis that a conscious knowledge of learning does not "turn into" subconscious knowledge is challenged. While acknowledging its limited validity, the paper agrees with McLaughlin (1978, 1990), Bialystok (1978), and Ellis (1993) on a potential interface between explicit and implicit knowledge. Issues are raised, however, to account for various possibilities concerning interface and a range of factors contributing to the variability of the monitor.

## Krashen's Monitor

Krashen (1981, 1982) proposes a distinction between acquisition and learning. Acquisition is a subconscious process, during which the learner focuses on the meaning, and the result of which, equally subconscious, assumes the sole responsibility for production. Learning, on the other hand, refers to the conscious knowledge of an L2, known as "grammar," or "rules" (1982:11). Learning is useful only as a monitor - allowing us to self-correct "errors" in the output of the acquired system before or after the output (see Figure 1). Krashen also recognizes editing by "feel," but chooses not to develop it. A very important point Krashen makes is that learning simply does not "turn into" acquisition.

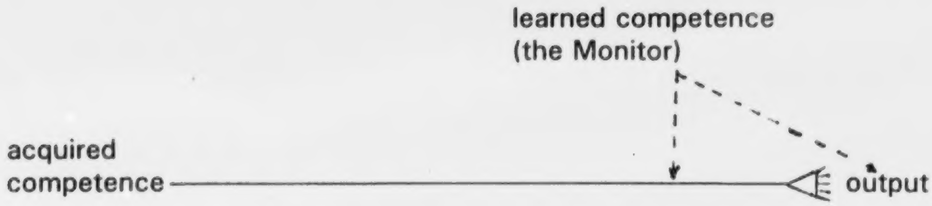

Figure 1: A model of adult second language performance (Krashen & Terrell 1983:30)

A number of issues regarding Krashen's Monitor deserve reconsideration. First, his notion of monitoring is too narrow - limited basically to morphosyntax. He has nothing to say about other levels of language and language use, such as phonology, lexis, discourse, and truth value (Morrison & Low 1983; Ellis 1986), and culture. Second, Krashen applies the Monitor to (especially oral) production, leaving out reception (Gregg 1984; Rivers 1994). Third, while defining the Monitor as a psychological process, Krashen ignores the social contexts and functions that dictate monitoring variability (Ellis 1986, 1994; Morrison & Low 1983). Fourth, Krashen's exclusive non-interface position regarding the relationship between explicit and implicit knowledge runs counter to intuition and reality (McLaughlin 1978, 1990; Bialystok 1978; Gregg 1984; Ellis 1993, 1994; see section 3). Lastly and perhaps most importantly, the very limited role Krashen assigns to the Monitor and the "peripheral and fragile" effect he (1992) perceives for the instruction of grammar, and by extension, of language in general, have led to serious undesirable teaching effects such as fossilization and low proficiency of L2 students (e.g. Swain 1985).

## 2. Reconceptualizing Monitor

Morrison & Low see monitoring as a critical faculty that "gives awareness of what has been created, making it possible to check, either before or after articulation for...deviations from intention that characterize normal speech" (1983:228). This notion, while very useful and certainly broader than Krashen's, poses two problems, one being the controversial status of awareness as conscious (see Stainton 1992; Nicholas 1990) and the other being the apparent restriction to speech. Ellis incorporates written production in his interpretation of monitoring as "the use of any form of knowledge to correct incipient or actual output" (1986:179) but also leaves out comprehension (unless comprehension is thereby included, see Stern 1983:409). Nonetheless, Morrison & Low and Ellis (and others) have set the basis that enables us to reconceptualize monitor in a more comprehensive (and more compatible with reality) manner, such as follows:

> To monitor is to use explicit or implicit knowledge to judge, check, and/or correct the use of language or meaning in social contexts (according to communication goals) before, during, or after the language execution process.

To distinguish from Krashen's Monitor, we use monitor (small "m"). A few explanations will help to clarify the extended notion. Explicit knowledge is knowledge we consciously know we have (Lightbown 1985), whether it assumes the same rule as defined by a linguist or not (Nicholas 1990; Gregg 1984), or whether it can be verbalized or not (Nicholas, 1990). Implicit knowledge is knowledge which we have and which somehow directs our behavior, but which we are not ordinarily aware of (Lightbown 1985). This type of knowledge accommodates our "feel" for language. The monitor operates when the learner/user attends to self- or other-produced output or input to judge whether it accords with one's expectation, or one's (or other's) intention. S/he may simply check without repair (causing "lapse," Morrison & Low 1983), or may choose to correct the "error." All this could occur as a result of internal or external feedback. The degree of monitoring may vary from person to person, and with the same person, from situation to situation, and in the same situation, from circumstance to circumstance (see Morrison & Low 1983:236-37; see also Ellis 1986, 1994). The reconceptualization incorporates both a weak version that sees monitoring as a "quality control mechanism" to edit out "silly mistakes" and a strong version that allows monitoring to mediate between conflicting internal rules or possibilities in order to settle the differences (see Morrison & Low 1983). As such, the monitor is a dynamic constructive and reconstructive strategy, and monitoring is recognized as a characteristic of the successful language learner (Naiman et al. 1978).

## Applications of the Monitor

The monitor thus reconceptualized operates on all three (or maybe more) phases of language use: (1) ideation, (2) planning, and (3) execution (production and reception). This paper chooses to focus on the following categories that are assumed to be most relevant to l2 learning: (a) lexis, grammar, and phonology, (b) discourse, genre, register, and mode, (c) learner strategy, (d) culture, power, and ideology.

Lexis and phonology as well as grammar (syntax and morphology) all denote the formal features of language. Lexis concerns the choice of appropriate words. The monitor functions when the user is unsure which word to choose and has to resort to some "rule." For example, some ESL students, when confused over "respectable" and "respectful," will remember "respectable = able to be respected (by)" and "respectful = full of respect (for)." I once had a student who had been taught the rule -

the shorter, the better - to distinguish "historic" and "historical," "classic" and "classical." These rules, which may be applied to both production and comprehension, do make sense in a way.

Typical examples to apply the monitor to phonology are the phonics approach and the basal reading approach which have been recently under attack from the Natural Approach and Whole Language advocates but which are still very popular in many parts of the world. A few simple exemplary rules are: pronouncing "ph" as [f], "-ed" as [t] following voiceless consonants in past tense verbs, as in *jumped, practiced*, and that a multiple-syllabic word usually has at least one accent, as in aMAsing, REREAd.

Both Krashen and his opponents (e.g. McLaughlin 1978, 1990; Rutherford & Sharwood Smith 1985; Schmidt 1990; Ellis, 1993) have devoted excessive attention to the study of the monitoring of grammar. Hence, it is not for me to elaborate here.

The next category to which the monitor applies relates to the contextual and social aspects of language, covered by the umbrella term language use. It includes discourse, genre, register, and mode.

Discourse refers to the conventions of cohesion, coherence, and rhetorical organization for joining utterances into a text (see Quirk et al. 1985; Swain 1985). For instance, use "he/him" to refer back to a singular male, 'firstly, secondly...lastly" to express sequence, begin a sentence with theme/given information and end it with rheme/new information. Many L2 learners have to learn to use such rules and monitor constantly to write effectively or to comprehend accurately.

Genre is a concept that has recently gained currency in applied linguistics. A genre comprises a class of communicative events, the members of which share some set of communicative purposes. These purposes shape the schematic structure of the discourse and influence and constrain choice of content and style (Swales 1990). In writing for example, the monitor operates in choosing the right structural and/or content schemata for a particular style of communicative event such as writing news reports and research papers.

Register is a "contextual category correlating groupings of linguistic features with recurrent situational features" (Gregory & Carroll 1978:4). It conventionally contains three components: field, tenor, mode. In clarifying genre and register, Couture (1986) suggests that genres (e.g. research report) are completable structured texts, while registers (e.g. language of scientific reporting) represent more generalizable stylistic choices. An explicit knowledge of register guides the appropriate use of language at the linguistic levels such as vocabulary and syntax.

Mode refers to the medium of language communication and can be either productive or receptive. It is assumed throughout this paper that the monitor applied to the various aspects (see Figure 2 below) can

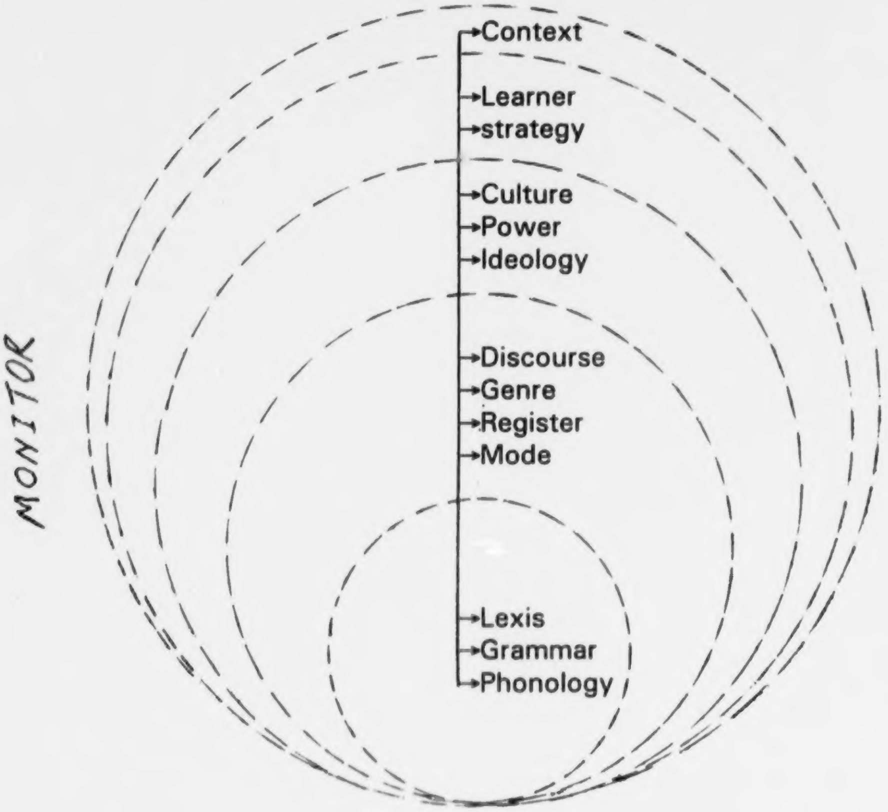
MONITOR
Context
Learner
strategy
Culture
Power
Ideology
Discourse
Genre
Register
Mode
Lexis
Grammar
Phonology

Figure 2: The monitor application model

function not only in speaking and writing, but reading and listening. In particular, monitoring can help inductively analyze the forms in the input, to notice the gap between the input and one's knowledge (Gass 1991; Schmidt 1990; Rivers 1994), and to pass judgement on the meaning (both semantic and formal) reconstructed from the input (Morrison & Low 1983; Gregg 1994). Masny (1990) for example, finds an (explicit) linguistic knowledge of English greatly improves the reading competence of her ESL students. Carrell (1992) finds an explicit knowledge of the text structure significantly facilitates ESL students' reading comprehension measured through recall.

Learner strategies, subdivided into learning, production, and communication strategies (Ellis 1986), are "those conscious or unconscious processes which language learners make use of in learning and using [producing] a language" (*Longman dictionary of applied linguistics*, 1985:274). The monitor activates the learner to shift from using an inappropriate strategy or none to using an appropriate one. In this case, monitoring assumes a metacognitive role and is responsible for efficient and effective processing on any of the other levels (see Figure 2). (Unfortunately, learner strategy training has often been neglected by L2 teachers; see Rich & Presseley 1991).

A socio-political aspect of L2 learning that is important for consideration comprises culture, power and ideology. Two seemingly opposing views are in place. One assumes a positivist stance: Live in Rome as Romans do. In this view, the L2 learner should learn the target culture (TC), together with the ideologies enveloped, and constantly monitor his/her behavior with reference to the TC standards and conventions. Critical pedagogues (e.g. Pennycook 1990; Fairclough 1992) disagree. They see language and culture as conventions and practices invested with power relations and ideological processes and consequences. The appropriateness models in language use are essentially ideologies, projecting representations of sociolinguistic reality which correspond to the perspective and interests of the dominant social section (Fairclough 1992). Upon entering a second culture, L2 students are the most susceptible of falling victim to this power and ideology. L2 teachers can help them by making explicit this knowledge and encouraging them to draw upon their own experiences, thus empowering them. L2 students then may use their own cultural resources with more confidence.

For convenience, the various language and learning aspects amenable to monitoring have been addressed separately. These levels are actually interrelated and interactive. For example, learner strategy helps us to use lexis, grammar, and phonology effectively and efficiently, while the availability and monitoring of the latter are likely to bring about changes in the former. The interdependent and interactive relationships are captured in Figure 2 (note the two-way arrows). (The broken circles indicate that other hierarchical arrangements of the categories and their relationships may be possible.)

## 4. Effects of Monitoring

Certain kinds of monitoring have been found to be a of which, found in L2 research (also true of form-focused instruction), are accuracy, fast rate of acquisition, and potential of higher language proficiency (Long, 1993). In other words, one is likely to become an effective and efficient language user.

As mentioned earlier, monitoring may involve explicit and implicit knowledge. Probably there is not much objection to monitoring through intuition. The concern may be that since overreliance on explicit knowledge may slow down the execution process, can one turn explicit into implicit knowledge? Following Ellis (1993), I identify two major positions: non-interface and interface. A non-interface position (model (a) in Figure 3) maintains the non-existence (note not impossibility) of students progressing from explicit to implicit knowledge. It applies when applying explicit knowledge in practice results in greater facility in using the knowledge but still involves accessing conscious L2 knowledge. Such a case exists with many adult learners, especially in the initial stages and/or in case of very difficult language features (e.g. the past subjunctive mood). This is the only position Krashen maintains.

It is to be realized that some explicit knowledge will remain so simply because of inadequate practice, while some other explicit knowledge gets forgotten after one or a few times of use (therefore, the broken lines in Figure 3).

An interface position supports a conversion from explicit to implicit knowledge. Ellis further distinguishes a strong interface, not requiring stringent constraints (model (b)) (e.g. McLaughlin 1978, 1990; Gregg 1984; Sharwood Smith 1981), and a weak interface, requiring two conditions: that the practice must be communicative language use and that the learner must be developmentally ready for the linguistic item (model (c)).

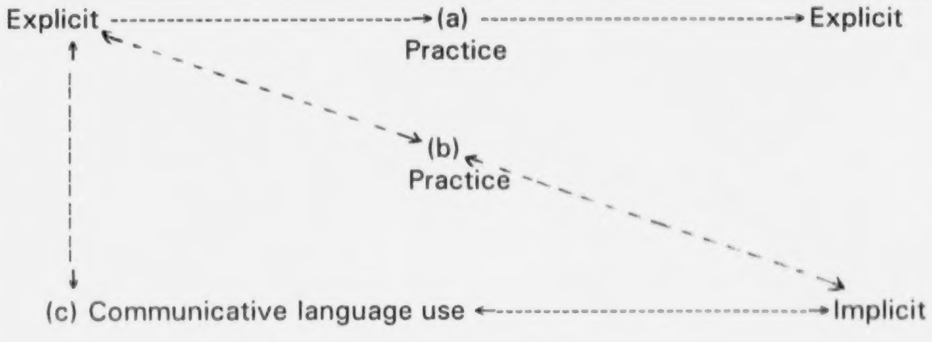

Figure 3: Explicit/implicit knowledge converting models

In practice, however, the explicit/implicit distinction is not always clear-cut. Instead of an instantaneous realization, the conversion usually assumes a gradual process, operating on a more explicit to more implicit continuum.

Along with the continuum is the degree of monitoring that varies with the learner, at different developmental stages, and in different social contexts. A learner not monitoring some language phenomenon at one time or in one situation may do so at another time or in another situation, depending on his/her mastery of the particular knowledge in question and the amount of attention required to perform the language task. In certain cases, the conversion may proceed the other way around, from implicit to explicit knowledge. This happens when L2 learners try to deconstruct, for example, formulaic expressions, or analyze what is internalized knowledge (note the double-headed arrows).

In positing three models, I do not mean to downplay model (c). Instead, while acknowledging the other options, I fully support model (c) for its communicative approach to practice (see Hu 1993). In other words, L2 students need to be given not only explicit knowledge about the various categories but opportunities to practice and use the knowledge in meaningful relevant ways to meet their needs and purposes (see Celce-Murcia 1993). This could mean that not everything has to be learned explicitly. Some knowledge, formulaic expressions for example, is bettered learned in chunks without analysis (see Stern 1983:404). Thus, Pica (1994) hypothesizes that a mixture of explicit and implicit knowledge makes the best gains. But exactly what (beside formulaic expressions) is better for explicit or implicit learning by whom undoubtedly calls for further research.

What we do have at the moment is some evidence that shows an explicit knowledge of grammar, discourse, and strategy used for monitoring enhances the rate of language acquisition and improves the accuracy of language use (e.g. Sharwood Smith & Rutherford 1985; Masny 1990; Carrell 1992; Norris 1988) and that explicit knowledge of grammar, when at a proper level of difficulty, can turn implicit with communicative practice (Zhou 1990). Doubtlessly, more empirical studies may need to be done on these and other language learning aspects.

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# SUBVOCALIZATION AND SUPPRESSION EFFECTS IN READING COMPREHENSION

## -The Case of Japanese EFL Students-

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## INTRODUCTION

It is natural that Japanese EFL students engage in a different cognitive process from that of Japanese when they try to memorize or understand English sentences. Interference of Japanese related to subvocalization was reported by Watson(1933)in early studies, and Levy(1975),Slowiaczek et al.(1980) in recent years. They found advantages for subvocalization that increased comprehension, especially for more difficult passages. They also claimed that subvocalization sometimes hindered fluent reading. What about Japanese EFL students? In most cases, English teaching is carried in the Japanese language, and as a result, there might be some unique features in college reading classes. We formulated the following questions; 1. When you read, you tend to read word by word. 2. When you read, you can not continue when you come across a new word. 3. When you read, you whisper the words to yourself. 4. When you read, you think it is very difficult to do scanning or skimming. 5. When you read, you try to translate the words into Japanese. 6. English teaching in junior and senior high school tends to be grammar-translation oriented. It might be adequate for the preparation of entrance examinations; however, it is not practical at all. We have distributed questionnaires(Appendix 1) to 96 EFL students in college classes. The results are shown in Table 1. The answer is "YES" or "NO", and there are ten degrees between "YES" and "NO". For example, five means a middle point, neither "YES" nor "NO". The table shows the number of subjects, standard deviations, and averages. According to Table 1, the average of the answer for the sixth question is 7.427, and it is higher than any other average ratings. This indicates that they are disappointed in the English Education in junior or senior high school in the sense of the word,"practical". The second largest average of the questionnaires is 7.385, and it is much higher than we expected. Other numbers except those two numbers are also higher than the middle point "5", which means those numbers are closer to the answer "YES". These six features surely come from the harmful effects of the Grammar-Translation Method and are indicative of Japanese interference. As a result, the suppresion effects of subvocalization may work excessively and also hinder comprehension through reading. To make this idea clearer, we would like to present the following hypothesis.

HYPOTHESIS: Japanese ESL students tend to use subvocalization in reading habitually, and it always delays comprehension through reading.

## METHOD

Subjects: The number of subjects was 96, and they were university first-year students whose major was not English. They were Japanese and their ages ranged from 18 to 20 years, and they had at least six years of English education in junior and senior high school before admission to the university.

Materials: The passage of the reading material was taken from Interactions II (A Reading Skills Book) by Elaine Kirn & Pamela Hartmann. It consisted of 129 words about the life of American Indians. Each sentence had a number from one to ten to make the reading comprehension task easy.

Design and Procedure: Subjects were given a reading comprehension test. The test was a trial examination of TOEFL test from Barron's How to Prepare for the TOEFL Test of English as a Foreign Language by Sharpe (1983). According to the results after this test, the subjects were divided equally into three groups (each group has 32 subjects) using One-Way ANOVA ($F(2,93)=0.261$(n.s.)). These groups were named Group A, Group B and Group C. Group A subjects performed three tasks. In the first task, they were asked to memorize all the sentences given as experimental material. When they memorized the sentences, they were told to read aloud, and the time limit was eight minutes. In the second task, right after the first task, they were given the recall test (Appendix 3) whose limit time was ten minutes. And the third task was carried out with ten questions about the content of the passage American Indians (Appendix 4). Ten minutes were given for this final task. For Group B, subjects were also given three tasks. Almost all procedures were the same as the ones for Group A, but in the first task, they were told to read the sentences silently. For Group C, the same procedures were used as those of Groups A and B except the part of the first task. In this task, subjects were required to read silently and at the same time they were told to keep chewing a piece of chewing gum. We used a piece of gum because it suppresses subvocalization without cognitive load. The following concrete indications were offered to each group. " I would like to carry out a test concerned with memory retention and reading comprehension. Please read (aloud for Group A, silently for Group B, and with chewing a piece of gum for Group C) the paragraph on the paper that I will present to you. I will give you eight minutes' time. And after that, you will get another paper for memory retention (showing the paper Appendix 4). You will fill in the paper for ten minutes, and then the third paper will be given to you. The paper has ten questions about the content of the paragraph. You have to try to answer the questions for another ten minutes. Now, please start." I also told them seriously to stop reading aloud for Group A, and not to stop chewing a piece of gum for Group C. We would like to add that papers were collected when each task was finished, and that each experiment for each group was carried out at a different time and place.

## RESULTS

In the grading of the memory retention test which was the second task, subjects had to recall and write each sentence that they memorized. A rating of at least 80 per cent in the sentence completion was required of them. In other words, they had to recall over 9 words out of 12 words for sentence no.1, over 14 words out of 18 words for sentence no.2, over 6 words out of 8 words for sentence no.3, over 8 words out of 10 words for sentence no.4, over 7 words out of 9 words for sentence no.5, over 15 words out of 19 words for sentence no.6, over 4 words out of 6 words for sentence no.7, over 8 words out of 11 words for sentence no.8, over 4 words out of 6 words for sentence no.9, and over 7 words out of 9 words for last sentence no.10. All the misspellings of the words were counted as wrong answers and other grammar mistakes such as incorrect word order were not regarded seriously, but only the number of correctly-spelled words was counted. Table 2 shows the number of subjects who had a rating of 80 per cent in each sentence completion for each group and the results of the chi-square for each group. We found that it was rather easy for subjects to perform this because two or three words in each sentence that they had to recall were indicated on the paper. For sentence no.1 to be recalled, all the numbers for Groups A, B, and C were very close and well-balanced with each other (Group A was 23, Group B was 25, and Group C was 26). There was no significant difference for each result of chi-square. Sentence no.2 was rather long for the subjects to recall, and the number of subjects for Group C was only 8. The other two numbers for Groups A and B were not very high. There were significant differences between Groups B and C ( $\chi^2(1)=6.478$, $p<.05$ ), and also Group C and A ( $\chi^2(1)=3.362$, $p<.1$). The word, "preserve" for sentence no.4, and the word,"Yukon" for sentence no.5 might obstruct subjects in the performance of this task. They were not very familiar with those two words, so they might have found it difficult to memorize them. As a result, there was no significant difference between Groups A and B for each sentence. And there were significant differences between Groups B and C ( $\chi^2(1)=2.744$, $p<.1$ for sentence no.3 and $\chi^2(1)=3.192$, $p<.1$ for sentence no.4) for each sentence. Sentence no.5 was very simple and short, and it was put in the middle of the paragraph. The number for each group was not very high, nor very low, either, and the result shows no significant difference among the groups. Sentence no.6 shows that Group A was 22, Group B was 21, and Group C was 14. Each number of the group was rather high. It may be possible to explain that subjects are able to benefit from the use of word association such as "man" and "woman". But the lower number of Group C leads to the significant differences between Group B and C( $\chi^2(1)=4.063$, $p<.01$). Each number for sentence no.7 and sentence no.9 was very close because both sentences consisted of 6 words and they were very simple grammatically. The results were almost the same as in the other cases, and there were significant differences between Groups B and C ($\chi^2(1)=3.216$, $p<.1$ for sentence no.7 and $\chi^2(1)=3.326$, $p<.1$ for sentence no.9) and Groups C and A ($\chi^2(1)=5.189$, $p<.05$ for sentence no.7 and $\chi^2(1)=5.317$, $p<.05$ for sentence no.9). Sentence no.8 was close to the last sentence and it consisted of 11 words which made it a long sentence. As a result, each number was not well-balanced and there only was a significant difference between Groups A and B ($\chi^2(1)=4.267$, $p<.01$). All the numbers for sentence no.10 were very low because the sentence was the last one in the paragraph. However, there were significant differences between Groups B and C ($\chi^2(1)=7.053$, $p<.01$) and Groups C and A ($\chi^2(1)=3.692$, $p<.1$). After taking everything above into consideration regarding the recall test, we reached following results. The numbers of Group C (Reading silently with suppression of subvocalization) were lower than the other two groups except those for sentences no.1, no.5, and no.8. The numbers of Group A (Reading aloud) were almost same as those of Group B (Reading silently without suppression of subvocalization). It can be roughly described as Group A = Group B > Group C. In the results of Chi-square tests for Groups A and B, there was no significant difference except for sentence no.8. In the results of Chi-square tests for Groups B and C, and Groups C and A, however, there were significant differences except for sentences no.1, no.5, and no.8. Table 4 indicates the averages for three groups (Group A was 4.938, Group B was 4.625 and Group C was 3.125) and the number of Group C was lower than the other two groups.The results of a t-test show $(A)x(B)=0.653$ (n.s.) df=62, $t(B)x(C)=2.346$ ($p<.05$) df=62, and $t(C)x(A)=3.355$ ($p<.01$). In the grading of the reading comprehension test, we tried to attach great importance to the contents of subjects' answers; therefore, we overlooked minor mistakes in grammar and vocabulary. Table 4 indicates the number of subjects for each group who had a correct answer for each question, and the results of the Chi-square for each group. In the question no.1, we expected a high number for each group because the question was very simple and clear. However, the results were not encouraging except for those of Group C. If they had recalled sentence no.3, they would have found it easy. They might have had some problems with the word, "preserve" as we mentioned before. On the contrary, the number of Group C was rather high because the subjects tended to answer the question with comprehension from the whole idea of the content. There were significant differences between Groups B and C($\chi^2(1)=4.000$, $p<.05$) and between Groups C and A($\chi^2(1)=3.065$, $p<.1$). Question no.2 was concerned with the sentence no.4, and there were also significant differences between Groups B and C($\chi^2(1)=3.668$,$p<.1$) and between Groups C and A($\chi^2(1)=4.655$, $p<.05$). In questions no.3, no.4, and no.5, there were significant differences between Groups B and C, and between Groups C and A. In those questions, subjects for Group C showed more of an understanding of the content of the paragraph than those of the two other groups as we expected. In question no.6, each number of the three groups was rather high and close. We assumed that it was comparatively easy for subjects to answer the question because the last sentence of the paragraph had the concrete words, "for thousand of years" which could be memorized easily. Therefore, there was no significant difference for each group combination. In question no.7, there was only a significant difference between Groups A and B. In question no.8 and no.9, there were also significant differences between Groups B and C, and between Groups C and A. In the last question, the number of each group was high and close, and there was no significant difference for each group. This explains that subjects could benefit from the use of word association such as "different animal" and "different season". Table 5 indicates the averages for the three groups (Group A was 4.844, Group B was 4.125 and Group C was 6.210) and the number of Group C was higher than two groups. The results of a t-test show $t(A)x(B)=1.541$(n.s.)df=62 $t(B)x(C)=4.125(p<.01)$)df=62, $t(C)x(A)=2.935(p<.01)$df=62. To summarize ,results of the comprehensive test were opposite to those of the recall test. That is, the numbers of Groups A (Reading aloud) and B (Silent reading without suppression of subvocalization) were often lower than that of Group C in the comprehension test, while the numbers of Groups A and B were often higher than that of Group C. Each number of Groups A and B was also very close except for question no.7. It can be roughly described as Group A = Group B < Group C. This is completely opposite to the results of the recall test(Group A = Group B > Group C). The results of the Chi-square test and t-test also showed significant differences between Groups B and C, and Groups C and A, but no significant difference between

Groups A and B was evident.

## DISCUSSION

Various kinds of studies about the effects of reading aloud and reading silently have been attempted, and some implications or findings concerned with the effects have been reported. That is, due to effects of reading aloud, short-term memory retention is enhanced consistently, and vocalization helps to comprehend rather difficult passages (Slowiaczek et al. 1980, Waters et al. 1985, Gathercole et al. 1988 etc.). In contrast, reading aloud interferes with comprehension due to the use of the phonological code (Anderson et al. 1971), with rhythm and intonation (Kleiman 1975), and with fluent reading (Baron 1973). As for the effects of reading silently, long-term memory retention for content of passages is enhanced and short-term and verbatim retention is hindered (Mori 1980, Tanimoto 1983). It also tends to accelerate responsive comprehension for meaning through linguistic information (Blank & Frank 1971). However, in this experiment with EFL students in Japan, we found no different outcome between effects of reading aloud and reading silently (without interference of subvocalization). The outcome seemed to be very similar to one of the effects of reading aloud above. We also found that the aspect of reading silently with interference of subvocalization was similar to one of effects of reading silently for people whose native language is English. According to these findings and the results of the questionnaire, the following interpretation can be formed; when EFL students read English passages, the effects of reading aloud and reading silently have no difference in the case of reading for meaning. However, when interference of subvocalization occurs in silent reading for EFL students, a native-like reading pattern appears. Hardyck et al. (1970) mentioned that subvocalization hinders fluent reading and reading comprehension. Edfeldt (1960) actually made an experiment about muscle action from the larynx, chin, lip and so on. He found that accomplished readers had less speech muscle activity than did poor readers. Moreover during the reading of easy text there was less speech muscle activity than during the reading of difficult text. The subjects of this experiment were all native speakers of English. We conclude that EFL students in Japan tend to use subvocalization very often when they read an English text. Especially for English language learners whose level is not high, all English texts may be difficult enough to merit the use of subvocalization. They try to read an English text word by word with Japanese translation, in a way similar to that of English native speakers who attempt to decipher complicated sentences.

Above all, the hypothesis that we formulated in the introduction has been affirmed in several cases studied.

## CONCLUSION

It is said that in one's native language, reading aloud enhances verbatim recognition and reading silently promotes comprehension for meaning of the content (Blank et al.,1971). In the case of English language learners, especially those whose level is low, the effects of both reading aloud and readingsilently are very similar to that of reading aloud for native speakers. They fall into the habit of concentrating on reading word by word because of the grammar-translation method used in junior and senior high school. The method forces them to translate word by word. However, blocking subvocalization in reading silently makes them concentrate on reading for meaning more deeply than verbatim recognition.

The response of "excesive subvocalization" is thought to be the outcome of the grammar-translation method of English education in Japan. The translation task itself from English to Japanese and vice versa must be a very intellectual activity and the method should be very appropiate for training translators and interpreters, but not for college students who need more eveyday skills. We would like to suggest that Enlish reading instruction for Japanese college students should be carried out considering the influence of this "excessive subvocalization". That is to say, before the instruction of reading strategies such as top-down, paragraph reading, scanning, skimming reading and so on, the influence of the excessive subvocalization should be taken into account as a basic element of reading instruction.

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(Appendix 1)

Quesionnaire of English Reading Comprehension

How do you read an English passage? Please indicate a number below between YES and NO as an answer for each question.

1) When you read, you tend to read word by word.

YES 1-2-3-4-5-6-7-8-9-10 NO

2) When you read, you can not continue when you come across a new word.

YES 1-2-3-4-5-6-7-8-9-10 NO

3) When you read, you whisper the words to yourself.

YES 1-2-3-4-5-6-7-8-9-10 NO

4) When you read, you think it is very difficult to do scanning or skimming.

YES 1-2-3-4-5-6-7-8-9-10 NO

5) When you read, you try to translate the words into Japanese.

YES 1-2-3-4-5-6-7-8-9-10 NO

6) English teaching in junior and senior high school tends to be grammar-translation oriented. It might be adequate for the preparation of entrance examination, however, it is not practical at all.

YES 1-2-3-4-5-6-7-8-9-10 NO

## APPENDIX 2.

### Part B

*Directions:* In Part B, you will be given a variety of reading material (single sentences, paragraphs, advertisements, and the like) followed by questions about the meaning of the material. You are to choose the *one* best answer, (A), (B), (C), or (D), to each question. Then, on your answer sheet, find the number of the problem and mark your answer. Answer all questions following a passage on the basis of what is *stated* or *implied* in that passage.

*Questions 31-34 refer to the following passage:*

Precipitation, commonly referred to as rainfall, is a measure of the quantity of water in the form of either rain, hail, or snow which reaches the ground. The average annual precipitation over the whole of the United States is thirty-six inches. It should be understood however, that a foot of snow is not equal to a foot of precipitation. A general formula for computing the precipitation of snowfall is that thirty-eight inches of snow is equal to one inch of precipitation. In New York State, for example, seventy-six inches of snow in one year would be recorded as only two inches of precipitation. Forty inches of rain would be recorded as forty inches of precipitation. The total annual precipitation would be recorded as forty-two inches.

31. The term *precipitation* includes
    (A) only rainfall
    (B) rain, hail, and snow
    (C) rain, snow, and humidity
    (D) rain, hail, and humidity

32. What is the average annual rainfall in inches in the United States?
    (A) Thirty-six inches
    (B) Thirty-eight inches
    (C) Forty inches
    (D) Forty-two inches

33. If a state has 152 inches of snow in a year, by how much does this increase the annual precipitation?
    (A) By two feet
    (B) By four inches
    (C) By four feet
    (D) By 152 inches

34. Another word which is often used in place of *precipitation* is
    (A) humidity
    (B) wetness
    (C) rainfall
    (D) rain-snow

*Questions 35-38 refer to the following passage:*

Courses with the numbers 800 or above are open only to graduate students. Certain courses, generally those devoted to introductory material, are numbered 400 for undergraduate students and 600 for graduate students. Courses designed for students seeking a professional degree carry a 500 number for undergraduate students and a 700 number for graduate students.

A full-time graduate student is expected to take courses which total ten to sixteen credit hours. Students holding assistantships are expected to enroll for proportionately fewer hours. A part-time graduate student must register for a minimum of five credit hours.

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35. In order to be eligible to enroll in Mechanical Engineering 850, a student must be
    (A) a graduate student (C) a full-time student
    (B) a part-time student (D) an undergraduate student

36. If an undergraduate student uses the number 520 to register for an accounting course, what number would a graduate student probably use to register for the same course?
    (A) Accounting 520 (C) Accounting 720
    (B) Accounting 620 (D) Accounting 820

37. A student who registers for eight credit hours is a
    (A) full-time student (C) part-time student
    (B) graduate student (D) non-degree student

38. A graduate student may NOT
    (A) enroll in a course numbered 610
    (B) register for only one three-hour course
    (C) register for courses if he has an assistantship
    (D) enroll in an introductory course

*Questions 39-41 refer to the following magazine index:*

| INDEX | |
|---|---|
| Cover Story | 3-13 |
| Economy and Business | 25-31 |
| Editorial | 56 |
| Entertainment | 41-46 |
| National News | 14-24 |
| Sports | 47-55 |
| World News | 32-40 |

39. On which of the pages of the magazine would one probably find a list of the current trading prices of stocks and bonds?
    (A) 25-31 (C) 47-55
    (B) 14-24 (D) 41-46

40. Which of the following pages would most likely contain a story about the production of a new movie?
    (A) 56 (C) 32
    (B) 46 (D) 54

41. In which section would one find a statement of opinion by the publishers of the magazine?
    (A) Cover Story (C) Editorial
    (B) National News (D) Entertainment

*Questions 42-44 refer to the following passage:*

When the Civil War ended in 1866, the Fourteenth and Fifteenth Amendments to the Constitution adopted in 1868 and 1870 granted citizenship and suffrage to blacks but not to women. In 1869 the

Wyoming Territory had yielded to demands by feminists, but eastern states resisted more stubbornly than before. A women's suffrage bill had been presented to every Congress since 1878 but continually failed to pass until 1920 when the Nineteenth Amendment granted women the right to vote.

42. Women were allowed to vote
(A) after 1866 (C) after 1878
(B) after 1870 (D) after 1920

43. The Nineteenth Amendment is concerned with
(A) voting rights for blacks (C) voting rights for women
(B) citizenship for blacks (D) citizenship for women

44. What had occurred immediately after the Civil War?
(A) The Wyoming Territory was admitted to the Union
(B) A women's suffrage bill was introduced in Congress
(C) The eastern states resisted the end of the war
(D) Black people were granted the right to vote

*Questions 45-48 refer to the following passage:*

Although nearly five hundred species of *Acacia* have been identified, only about a dozen grow well in the southern United States, and of these, only three are flowering. The ***Bailey Acacia*** has fernlike silver leaves and small, fragrant flowers arranged in rounded clusters. The ***Silver Wattle***, although very similar to the ***Bailey Acacia***, grows twice as high. The ***Sydney Golden Wattle*** is squat and bushy with broad, flat leaves. Another variety, the ***Black Acacia*** or ***Blackwood***, has dark green leaves and unobtrusive blossoms. Besides being a popular tree for ornamental purposes, the ***Black Acacia*** is valuable for its dark wood which is used in making cabinets and furniture.

45. Which of the following *Acacias* has the least colorful blossoms?
(A) *Bailey Acacia* (C) *Silver Wattle*
(B) *Sydney Golden Wattle* (D) *Black Acacia*

46. According to this passage, the *Silver Wattle*
(A) is squat and bushy (C) is taller than the *Bailey Acacia*
(B) has unobtrusive blossoms (D) is used for making furniture

47. How many species of *Acacia* grow well in the southern United States?
(A) Five hundred (C) Twelve
(B) Three hundred (D) Three

48. Which of the following would most probably be made from a *Black Acacia* tree?
(A) A flower arrangement (C) A pie
(B) A table (D) Paper

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*Questions 49-52 refer to the following instructions:*

> **For quick relief of upset stomach or acid indigestion caused from too much to eat or drink, drop two tablets in an eight-ounce glass of water. Make sure that the tablets have dissolved completely before drinking the preparation.**
>
> **Repeat in six hours for maximum relief. Do not take more than four tablets in a twenty-four-hour period.**
>
> **Each tablet contains aspirin, sodium bicarbonate, and citric acid. If you are on a sodium-restricted diet, do not take this medication except under the advice and supervision of your doctor.**
>
> **Not recommended for children under twelve years old or adults over sixty-five.**

49. This medication is recommended for
    (A) someone who needs more sodium in his diet
    (B) someone who does not eat enough citrus fruit
    (C) someone who has eaten too much
    (D) someone who has a headache

50. According to the directions, which of the following persons should NOT take this medication?
    (A) A thirteen-year-old boy
    (B) A fifty-year-old woman
    (C) A sixteen-year-old girl
    (D) A sixty-eight-year-old man

51. If you took this preparation one hour ago, how many hours must you wait in order to take it again?
    (A) Two hours
    (B) Three hours
    (C) Five hours
    (D) Twenty-four hours

52. What should you do with this preparation?
    (A) Drink it
    (B) Eat it
    (C) Rub it on
    (D) Gargle with it

*Questions 53-55 refer to the following sentence:*

In 1626, Peter Minuit, governor of the Dutch settlements in North America known as New Amsterdam, negotiated with Indian chiefs for the purchase of Manhattan Island for merchandise valued at sixty guilders or about $24.12, an investment that was worth more than seven billion dollars three centuries later.

53. In exchange for their island, the Indians received
    (A) sixty Dutch guilders
    (B) $24.12 U.S.
    (C) goods and supplies
    (D) land in New Amsterdam

54. New Amsterdam was located
    (A) in Holland
    (B) in North America
    (C) on the island of Manhattan
    (D) in India

2

55. On what date was Manhattan valued at seven billion dollars?
(A) 1626 (C) 1656
(B) 1726 (D) 1926

*Questions 56-60. For each of these questions, choose the answer that is* closest in meaning *to the original sentence. Note that several of the choices may be factually correct, but you should choose the one that is the* closest restatement of the given sentence.

56. You would have won the essay contest if you had typed your paper.
(A) You did not win the essay contest even though you typed your paper.
(B) You did not win the essay contest because you did not type your paper.
(C) You won the essay contest in spite of not typing your paper.
(D) Typing your paper made you win the essay contest.

57. Ridding plants of mildew or blight is usually more difficult than controlling insects and pests.
(A) Because insects are pests, it is more difficult to control them than to rid plants of mildew or blight.
(B) Mildew or blight is easier to control than insects and pests.
(C) It is easier to control insects and pests than it is to rid plants of mildew or blight.
(D) Controlling insects and pests is more difficult then ridding plants of mildew or blight.

58. In spite of the rain, the Fourth of July fireworks display was not cancelled.
(A) The Fourth of July fireworks display was not held because it rained.
(B) Rain caused the cancellation of the Fourth of July fireworks display.
(C) The Fourth of July fireworks display was held because it did not rain.
(D) Although it rained, the Fourth of July fireworks display was held.

59. As a conductor of heat and electricity, aluminum exceeds all metals except silver, copper, and gold.
(A) With the exception of aluminum, silver, copper, and gold are better than any other metal as conductors of heat and electricity.
(B) Aluminum is a better conductor of heat and electricity than silver, copper, and gold.
(C) Silver, copper, and gold are better conductors of heat and electricity than aluminum is.
(D) Silver, copper, and gold are exceeded only by aluminum as conductors of heat and electricity.

60. It is unlikely that the results of the elections will be made public before tomorrow morning.
(A) Tomorrow morning is probably the earliest that anyone will know the results of the elections.
(B) Before tomorrow morning we will probably know the results of the elections.
(C) The results of the elections will most likely be made known before tomorrow morning.
(D) We will probably not be told the results of the elections tomorrow morning.

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TABLE 1. Ms and SDs for Answers of Questionnaire

| Question # | N | SD | M |
|---|---|---|---|
| 1 | 96 | 2.421 | 5.844 |
| 2 | 96 | 2.779 | 6.083 |
| 3 | 96 | 2.697 | 7.385 |
| 4 | 96 | 2.502 | 5.229 |
| 5 | 96 | 2.633 | 6.667 |
| 6 | 96 | 2.397 | 7.427 |

* Contents of the Questionnaire

Question #

1. When you read, you tend to read word by word.
2. When you read, you can not continue when you come across a new word.
3. When you read, you whisper the words to yourself.
4. When you read, you think it is very difficult to do scanning or skimming.
5. When you read, you try to translate the words into Japanese.
6. English teaching in junior and senior high school tends to be grammar-translation oriented. It might be adequate for the preparation of entrance examination, however, it is not practical at all.

TABLE 2. The Number of Subjects Who Recalled Each Sentence for Each Group and Chi-Square

| Group | Sentence No.<br>1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| A | 23 | 15 | 10 | 9 | 19 | 22 | 18 | 16 | 17 | 9 |
| B | 25 | 18 | 8 | 10 | 15 | 21 | 16 | 8 | 15 | 12 |
| C | 26 | 8 | 3 | 3 | 15 | 14 | 9 | 11 | 8 | 3 |
| Chi-Square | | | | | | | | | | |
| A x B | 0.333<br>(n.s.) | 0.563<br>(n.s.) | 0.309<br>(n.s.) | 0.075<br>(n.s.) | 1.004<br>(n.s.) | 0.071<br>(n.s.) | 0.251<br>(n.s.) | 4.267<br>(p<.01) | 0.250<br>(n.s.) | 0.638<br>(n.s.) |
| B x C | 0.096<br>(n.s.) | 6.478<br>(p<.05) | 2.744<br>(p<.1) | 4.730<br>(p<.05) | 0.000<br>(n.s.) | 3.089<br>(p<.1) | 3.216<br>(p<.1) | 0.674<br>(n.s.) | 3.326<br>(p<.1) | 7.053<br>(p<.01) |
| C x A | 0.783<br>(n.s.) | 3.326<br>(p<.1) | 4.730<br>(p<.05) | 3.192<br>(p<.1) | 1.004<br>(n.s.) | 4.063<br>(p<.01) | 5.189<br>(p<.05) | 1.602<br>(n.s.) | 5.317<br>(p<.05) | 3.692<br>(p<.1) |

* A=Reading Aloud
B=Silent Reading (Without Suppression of Subvocalization)
C=Silent Reading (With Suppression of Subvocalization)

TABLE 3. Ms and SDs for Recall Test and Results of T-Test

| Group | N | SD | M |
|---|---|---|---|
| A | 32 | 1.539 | 4.938 |
| B | 32 | 2.176 | 4.625 |
| C | 32 | 2.214 | 3.125 |

t(A x B) = 0.653 (n.s.) df=62
t(B x C) = 2.346 (p<.05) df=62
t(C x A) = 3.355 (p<.01) df=62

* A=Reading Aloud
B=Silent Reading (Without Suppression of Subvocalization)
C=Silent Reading (With Suppression of Subvocalization)

TABLE 4. The Number of Subjects that Gave Correct Answers for Each Group and Chi-Square

| Group | Question No. 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| A | 13 | 18 | 10 | 8 | 10 | 23 | 25 | 16 | 10 | 22 |
| B | 12 | 19 | 8 | 7 | 8 | 21 | 12 | 14 | 12 | 19 |
| C | 20 | 26 | 18 | 15 | 17 | 20 | 20 | 23 | 20 | 20 |
| Chi-Square | | | | | | | | | | |
| A x B | 0.066<br>(n.s.) | 0.064<br>(n.s.) | 0.309<br>(n.s.) | 0.087<br>(n.s.) | 0.309<br>(n.s.) | 0.291<br>(n.s.) | 10.827<br>(p<.01) | 0.251<br>(n.s.) | 0.277<br>(n.s.) | 0.610<br>(n.s.) |
| B x C | 4.000<br>(p<.05) | 3.668<br>(p<.1) | 6.478<br>(p<.05) | 4.433<br>(p<.01) | 5.317<br>(p<.05) | 0.068<br>(n.s.) | 4.000<br>(p<.05) | 5.189<br>(p<.05) | 4.000<br>(p<.05) | 0.066<br>(n.s.) |
| C x A | 3.065<br>(p<.1) | 4.655<br>(p<.05) | 4.063<br>(p<.05) | 3.326<br>(p<.1) | 3.139<br>(p<.1) | 0.138<br>(n.s.) | 1.871<br>(n.s.) | 3.219<br>(p<.05) | 4.063<br>(p<.05) | 0.075<br>(n.s.) |

* A=Reading Aloud
B=Silent Reading (Without Suppression of Subvocalization)
C=Silent Reading (With Suppression of Subvocalization)

TABLE 5. Ms and SDs for Results of the Question, and T-Test

| Group | N | SD | M |
|---|---|---|---|
| A | 32 | 1.641 | 4.844 |
| B | 32 | 2.012 | 4.125 |
| C | 32 | 2.027 | 6.219 |

t(A x B) = 1.541 (n.s.) df=62
t(B x C) = 4.082 (p<.01) df=62
t(C x A) = 2.935 (p<.01) df=62

* A=Reading Aloud
B=Silent Reading (Without Suppression of Subvocalization)
C=Silent Reading (With Suppression of Subvocalization)

APPENDIX 3.

① Today, some Native Americans are holding on to their traditional ways of living.

② For instance, in Alaska and Canada, some Indians depend almost completely on hunting and fishing, just as their ancestors did.

③ This way of life preserves the customs that hold the society together.

④ For example, in late summer people in the Yukon fish for salmon.

⑤ Each person in the family plays a role in this activity;

⑥ the men catch the fish, the women and girls cut, dry, and smoke the fish, and the older people give advice.

⑦ The native peoples hunt different animals in different seasons.

⑧ The hunt is essential;people neither have nor want supermarkets in their villages.

⑨ Although they have accepted some modern technology,

⑩ these people live as they have done for thousands of years:

APPENDIX 4.

Student number Name

① Today,

② For instance,

③ This way of life

④ For example,

⑤ Each person

⑥ the men

⑦ The native peoples

⑧ The hunt

⑨ Although

⑩ these people

APPENDIX 5.

Student number Name

1. What keeps the society together?

2. What do people in Yukon do in late summer?

3. What is unnecessary for their traditional way of living?

4. What is the most essential element in the Native American society?

5. What do they think about modern technology?

6. How long have they followed these customs?

7. What are their traditional ways of living?

8. Whose customs do they have to follow?

9. Why do the men, women, girls and older people have different work?

10. What do the native people do in different seasons?

# LANGUAGE SOCIALIZATION IN FOREIGN/SECOND LANGUAGE CLASSROOMS

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## 0. Introduction

Language acquisition is currently studied from the the perspectives of anthropology and sociology (Schieffelin & Ochs 1986, Ochs 1988) in terms of socialization. In the narrow sense (Ochs 1988), socialization may be viewed as the transmission of the commonly shared sociocultural knowledge and corresponding sociocultural behaviors from mature members of a society to children of that society. In this view, the process of socialization is considered complete when children have acquired the knowledge. In the broad sense (Cicourel 1973, Ochs 1988), socialization may be taken as a process in which people not only acquire the sociocultural knowledge and behaviors shared by their society's members but also constantly interpret and integrate others' sociocultural orientations in their existing sociocultural frameworks. In the second view, socialization is not limited to one's childhood, but is actually active throughout one's life. This process is commonly observed in adult speakers in the form of switch of dialects, registers, and codes appropriate to the situation. This adjustment is both linguistic and sociocultural. This is part of the process of socialization in the broad sense. It is crucial to recognize that language plays an important role in the process of socialization from childhood to adulthood. Schieffelin and Ochs (1986) and Ochs (1988) call this role of language as 'language socialization', which is defined as both socialization through language and socialization to use language.

In this paper, first, I will examine the concept of language socialization in Schieffelin and Ochs (1986) and Ochs (1988) language acquisition model. Second, I will argue for the relevance of language socialization in foreign/second (hence second) language learning, particularly in learning Chinese and English as a second language. Third, I will discuss, in terms of language socialization, how to organize pedagogical activities that not only facilitate language acquisition but also facilitate language socialization across cultures in second language classrooms. Fourth, I will conclude with a discussion on the significance of the application of language socialization theory in foreign language classrooms in relation to theories and practice of developing communicative competence in second language acquisition.

## 1. Language Socialization in Language Acquisition

In Schieffelin and Ochs (1986) and Ochs (1988) language acquisition model, language socialization is defined as socialization through language and socialization to use language. In the process of acquiring a language, a language learner not only acquires the language but also the sociocultural concepts and beliefs coded in that language. A speaker of a language expresses such sociocultural concepts and beliefs, whenever he or she uses that language, since those concepts and beliefs are coded in the language and the use of the language is determined socioculturally (cf. Wierzbicka 1991).

For example, a conversation is not unorganized language. It is organized as discourse, which is itself determined by a relevant social event. In fact, according to Hymes (1974), discourse is not merely a reaction to social events. A discourse itself may be a social event (story-telling, joke-making, etc.). Generally speaking, a social event may have a corresponding discourse structure. A particular discourse specifies what language is appropriate and what language is not, when it is appropriate to take turns and when it is not, what non-verbal language is appropriate and what non-verbal language is not. Sociocultural concepts and beliefs are coded in discourse structures, and guide decisions on what is appropriate and what is not appropriate in a social event. Thus, social events and their corresponding discourse structures build a frame within which people communicate. It is a top-down process. People evaluate a social event, before they decide what is appropriate to say. A child seems to have acquired both linguistic and sociocultural knowledge to cope with the above processes in communication, as he becomes a competent and fluent speakers of his language.

How does a child acquire sociocultural knowledge and linguistic knowledge? In Schieffelin and Ochs' model, a child acquires both in his daily activities, as schematically illustrated below (Ochs 1988:15):

Linguistic Knowledge <--> Activity <--> Sociocultural Knowledge

Activity is considered the key in this model of language acquisition, and there are activities that seem to be particularly related to language acquisition in children. As child language acquisition studies carried out in Africa and America (Watson-Gegeo & Gegeo 1986, Demuth 1986, Peters & Boggs 1986) indicate, children's activities may be classified into two categories: practice and participation. It is observed that children begin to practice conversations with their caregivers at the age of about eight to nine months. In practice activities, caregivers introduce linguistic forms that are appropriate for a social event. Sometimes, caregivers may simply give explicit instructions such as *repeat* to encourage children or *say it this way* to correct their mistakes. Sometimes caregivers code their instructions in their utterances by means of certain intonation contours or pitches, as observed in some African languages (Demuth 1986, Watson-Gegeo & Gegeo 1986). In participation activities, children are encouraged to participate in a real social event, if it is appropriate. Caregivers give explicit or implicit instructions to encourage participation or to correct mistakes if there are any. These two categories of activities are interwoven in children's daily activities under the supervision of their caregivers, as they grow to be mature members of their society. When learning linguistic forms associated with social events in activities, children learn the sociocultural concepts and beliefs. When using the linguistic forms properly in social events, children correctly express their community's sociocultural concepts and beliefs.

Similar phenomena are observed in Chinese children (Zhou 1992), though there is not any systematic study on this topic in children acquiring Chinese. For example, parents or caregivers often coach their children in what to say and how to behave before they are taken to a social occasion. Appropriate linguistic forms are introduced for the occasion. During the occasion, children are encouraged to say what is socioculturally appropriate, and their sociocultural errors are corrected immediately. After the event, parents often comment on their children's linguistic and non-linguistic behavior, praising them for good behavior and scolding them for improper behavior. Thus, sociocultural concepts and beliefs are further reinforced in correct use of linguistic forms in a social event. It is clear that parents care about their children's sociocultural behavior in everyday life rather than their linguistic forms per se.

In short, language socialization provides a viable account for the relation between linguistic knowledge and sociocultural knowledge in language acquisition. These two are linked by activities, which may be divided into two categories: practice and participation. In practice activities, caregivers focus more on the linguistic forms, while in participation activities, caregivers are more concerned about sociocultural appropriateness. In their daily activities, children not only learn the language but also learn how to use it properly in a social event.

## 2. Language Socialization in Second Language Acquisition

The above observations concerning language socialization are mainly made in first language acquisition studies. The question which needs to be addressed is what relation exists between language socialization and second language acquisition. The answer seems to be straightforward. When Chinese speakers learn English, they need to develop competence both in English language and culture. When English speakers learn Chinese, they need to develop competence both in Chinese language and culture. This competence is what Hymes (1971, 1974) calls communicative competence -- an ability of 'knowing what to say to whom in what circumstance and how to say it' (Scarcella, Andersen & Krashen 1990:xi). In addition, they must overcome the predominance of their own cultural concepts and beliefs, since social and cultural beliefs are coded in one's language and language use (Wierzbicka 1991). However, second language learners usually do not realize that the way they talk in their native languages is socioculturally marked or they don't realize what is socioculturally marked and what is not socioculturally marked in a language. It is necessary to make second language learners aware of sociocultural concepts and beliefs coded in language and language use both in their native languages and in a target second language.

For example, the social event of greeting is linguistically simple, but functionally and socioculturally rich and complicated. Wierzbicka (1991:132-34) formulates the meaning and function of English *how are you* in (1).

(1) a. I know that we can now say things to one another because we have come to the same place;
b. Because of this, I want to say something to you of the kind that people say to one another when they come to be in the same place;
c. I want you to know that I feel something good towards you;
d. I say: I want to know *how you are now*;
e. I want you to say something because of this;
f. I want you to say: *I am well*;
g. I think that you will say something like this;
h. I think that we will feel something good because of this.

Similar analysis can be found in Leech (1983), where such phrases as *how are you* are called conversation openers. Even if we assume that conversation openers are universal in function, what can be a conversation opener may still be socioculturally specific. In Wierzbicka's analysis, (b), (d), (f) and (g) are all fully coded with sociocultural concepts, beliefs and expectations. For instance, item (b) 'I want to say something to you of the kind that people say to one another' strongly indicates the sociocultural aspect of conversation openers. What is of the kind that people say to one another? The kind of thing that people say to one another in one language when they meet may not be the kind of thing that people say to one another in another language when they meet.

Misunderstanding often occurs for non-native Chinese speakers (particularly for those whose native language is English) communicating with native Chinese speakers in Chinese in China (cf. Zhou 1992, 1993).[1] Conversation openers in Chinese, such as *chi le mei* (have you had your meal), *shangke qu ba* (do you go to class) and *qu nar* (where are you going) in Chinese, are clearly socioculturally marked, though they may have exactly the same sociocultural function in Chinese as *hi* and *how are you doing* in English, as illustrated in (2):

(2) a. I know that we can now say things to one another because we have come to the same place;
b. Because of this, I want to say something to you of the kind that people say to one another when they come to be in the same place;
c. I want you to know that I feel something good towards you (I care about you);
d. I say: I want to know (*ni*) *chile mei* (have you had your meal);
e. I want you to say something because of this;
f. I want you to say: *wo chile* (I already have had my meal) or *zhe bu zheng qu shitang ne* (I am going to the cafeteria right now);
g. I think that you will say something like this;
h. I think that we will feel something good because of this.

We find that a conversation opener in Chinese has the same function as that in English, as a comparison of (1) and (2) indicates. For instance, both Chinese and English conversation openers are used in the social event of greeting to show friendly attitudes toward one another, and in this event some kind of affirmative response to the opener are expected in both languages.

Of course, there are differences. The major difference lies in conversation openers. Chinese speakers treat *qu nar* (where are you going) and *chi le mei* (have you had your meal) as conversation openers in the social event of greeting. However, native speakers of English do not treat those phrases as conversation openers in English, nor do they do so even when they speak Chinese. Native speakers of English simply fall back on their own native culture when they communicate in Chinese. This is what Hymes calls cultural interference (Scarcella, Andersen & Krashen 1990). In communicating in Chinese with native speakers of Chinese, misunderstanding arises when non-native Chinese speakers (whose native language is English) think that native speakers of Chinese do not say something of the kind that native speakers of English say to one another in English. To make matters worse, Chinese conversation openers like *qu nar* and *chi le mei* appear, in the eyes of the native English speakers, to invade one's privacy, since the non-native Chinese speakers do not treat those expressions as conversation openers but as real questions in their native language, and they tend to do so in their non-native language -- Chinese -- as well. This is an example of how sociocultural concepts and beliefs coded in one's native language and native language use may dominate one's interpretation and use of a foreign language. The result of this kind of conflict or misunderstanding is not always immediately evident (cf. Oksaar 1990), as compared to pragmatic transfer which is the active transfer of native language sociocultural competence in performing foreign/second language speech acts (cf. Beebe, Takahashi, & Uliss-Weltz 1990).

To sum up, I have illustrated, with the example of conversation openers in the social event of greeting in English and Chinese, how the predominance of the sociocultural concepts and beliefs coded in one's native language and native language use may cause difficulties and misunderstanding in communication in a second language. This is simply one example of the difference in the rich sociocultural concepts and beliefs coded in Chinese and English and in their use. It is essential to help second language learners of English and Chinese to realize such differences.

## 3. Pedagogical Implications

To help second language learners acquire competence in a second language and its culture while they learn them in classrooms, we need to analyze the sociocultural information coded in a second language and its use and make it available to second language students in pedagogical activities. How we present this kind of information to students in class is not a easy question to answer nor is it fully answered in communicative approaches to second language teaching.

My discussion in the above sections indicates that sociocultural concepts and beliefs are particularly coded in discourse structures related to social events. Thus, as a first step, we may analyze these concepts and beliefs in relation to social events, based on the sociocultural information in the relevant texts in second language textbooks. Classroom activities can be organized around the social events in question. Second language students are participants in these activities. More specifically, students, like actors and actresses, act out every social event and play different roles in every social event, where language is used socioculturally.

At the beginning level, we can organize classroom activities around a single social event, such as greetings, including greeting between strangers, between friends, between colleagues, between young people and old people, subordinates and superiors. For example, native Chinese speakers use a variety of conversation openers, depending on their relation to the person spoken to; there is a difference between formal and informal greetings in English as well, though not as many as in Chinese.

At a higher level, we may organize activities around composite social events, such as in the occasion of visiting somebody.[2] In the composite social event of visiting someone, there are single social events like greeting, offering guests something to drink or to eat, accepting the offer, expressing gratitude, giving regards etc.. All these single social events are highly socioculturally marked in a language. For instance, in many southeast Asian languages, in the social event of offering guests something to drink or to eat, the host is expected to make the offer several times in order to show politeness, while the guest is expected to ask the host several times not to bother or to say *no* in order to show politeness. This presents a problem for speakers of those languages when they speak English as a second language. They fail to get anything to drink or eat from their English speaking hosts, when they say *no*, since *no* **means** *no* in English. Thus, organizing class activities in terms of social events also enriches oversimplified language use presented in most second language textbooks.

Pedagogically speaking, classroom activities should begin with single social events and proceed to composite social events only after students are familiar with the routines of each single social event. In short, we need to develop classroom activities in terms of social events, with emphasis on linguistic forms and language use respectively. Classroom activities may be divided into two categories -- practice activities and participation activities -- as seen in child language socialization (cf. Schieffelin & Ochs 1986, Ochs 1988), though we may need some kind of bridge between the two in classrooms.

In practice activities, we focus on linguistic forms relevant to a social event. First, we introduce materials in textbooks and work on pronunciation, sentence patterns, characters, etc.. Second, we should make sure, by means of drilling those materials, that students master these linguistic forms. Third, we begin to give students limited social context to work with in class activities. At this stage, we correct students' errors in linguistic forms, along with their errors in language use, when it is pedagogically and psychologically appropriate. This kind of activity is similar to most of what we usually do in classrooms, except for that we have a clear sociocultural goal to begin with.

In activities bridging between practice and participation activities, first, we can assign students social events and roles, and ask them to work in peer groups. It is very important that we clearly specify the situations and every participant's role and that we make sure that students understand it. For example, we may give the following situation to beginning students: 'This is the ninth week of the semester. On your way to class, you meet a classmate who regularly works with you in group work in class. Greet him/her and talk briefly before you part.' The students must evaluate the situation and decide what is appropriate to say, based on what they have learned so far. In this situation, students must determine their relation to the person whom they are to greet, before they can decide what is appropriate to say. This is very crucial, since proper use of language in such a situation draws from the sociocultural concepts and beliefs coded in a second language related to the social events involved. For a better understanding of the situation, we may demonstrate, by acting out a social event, to the students how each role responds to each other in the social event. After students go through each social event in a lesson, we can allow students to choose from their inventory of social events and roles in their practice. At the bridge stage, we correct errors both in linguistic forms and in language use, when it is pedagogically and psychologically appropriate.

In participation activities, we focus only on language use. First, we can assign a social event and its roles to a group of students from the inventory of drilled social events. This group of students act out this social event, while the rest of the class observe their performance. Second, we can allow students themselves to choose from the inventory of drilled social events and the corresponding roles, and to take turns to act out, while other students observe them. At the participation stage, we only correct sociocultural errors, when it is socioculturally necessary, as parents do to their children. At the same time, we record uncorrected sociocultural errors and linguistic errors for later comments.

It is apparent that these activities do not fit in a large class. A solution to this problem is to divide a class into groups of two to three students. The advantages of group work have been explored in Long's (1990) study. Regarding communicative competence, the most important advantage is that group work allows students to function in a wider variety of roles and thus practice more communicative functions of language, as pointed out by Scarcella, Andersen and Krashen (1990:282). The above activities show that the essential difference between practice activities and participation activities is whether the focus is on linguistic form or not. However, to achieve our goal in class, we may say that group work is more practice-oriented, while performance before the whole class is more participation-oriented. In group work, we correct students' errors in linguistic forms and in language use immediately, as often as it is pedagogically and psychologically appropriate. On the other hand, in before-the-whole-class performance, we correct students errors immediately only if they are socioculturally inappropriate, as parents will do to their children in such a situation. Of course, we do not ignore students' linguistic errors in participation activities. We may record students' linguistic errors for later practice sessions or for individual and group practice activities.[3]

In short, following the model in Schieffelin and Ochs (1986), we may divide teaching activities in a foreign language classroom into two categories: practice and participation, with the former focusing more on the linguistic forms, while the latter focuses on language use in specific social events. We may add some bridge activities between the two. In doing so, we promote pedagogical activities that not only facilitate language acquisition but also facilitate language socialization across cultures in second language classrooms.

## 4. Conclusion

I have started with the notion of socialization and language socialization. In Schieffelin and Ochs' (1986) and Och's (1988) model of language acquisition, language socialization is viewed as socialization through language and socialization to use language. This model provides a crucial link between acquiring linguistic knowledge and sociocultural knowledge, a link that is missing in other language acquisition models. This key link is daily activities -- practice and participation activities, in which a child acquires both linguistic and social knowledge.

I have illustrated with examples of language use in social events that acquisition of social knowledge is part of second language acquisition and must be dealt with as a whole, since such knowledge is coded in language and language use. Given Schieffelin and Ochs' (1986) model of language acquisition, the most efficient way to achieve this goal in second language classrooms is to get students involved in both practice and participation activities in social events, as children do in acquiring their first language. I have suggested some specific methods for organizing practice and participation activities and implementing them in class. I believe that there may be more optimal ways to incorporate principles of language socialization theory in teaching and learning a second language. Further empirical research is needed before we can find full application of this theory in foreign language classrooms.

Further, the application of principles of the language socialization model of language acquisition not only has implications for second language classrooms but also for second language acquisition theories too, particularly for theories about communicative competence in second language acquisition. The concept of communicative competence has been integrated into communicative approaches to language teaching for nearly two decades, since Hymes (1971, 1974) first put forward the idea of communicative competence. A lot has been done in research to determine the extent of communicative competence and its role in second language acquisition (cf. Wolfson & Judd 1983, Preston 1989, Scarcella, Andersen & Krashen 1990). As a result, a lot has been said as what should be taught in order to help students achieve this competence (cf. Brumfit & Johnson 1979, Scarcella, Andersen & Krashen 1990). However, it is not so clear exactly how we may help students achieve communicative competence in second language classrooms, where it is easier for them to develop linguistic competence but not so for them to develop communicative competence. It seems to me that the notion of activity in Schieffelin and Ochs' theory provides a solution to this problem.

## NOTES

[1] In my 1992 paper, I have documented a case in which a complaint was filed in a Chinese university by an American university exchange program solely based on a misunderstanding resulting from conversation openers. This kind of misunderstanding is due to the sociocultural differences that are largely ignored in oversimplified second language textbooks, and unfortunately by second language teachers as well.

[2] By composite social events, I mean several social events that are inherently related to one another to form the discourse structure for a social occasion.

[3] There is a concern of whether adult students are willing to engage in these practice and participation activities. My experience with adult students is positive. These activities are organized from simple ones to complicated ones. They begin with small group work and end with in-front-of-the-class performance. Most activities are carried out in groups. Students are well prepared when they come before the whole class. Students feel that these activities are less intimidating than some activities in a traditional classroom, say, answering a question or translating a sentence before the whole class. These activities are more like social activities than pedagogical activities. Theoretically, adult student active participation is also expected if socialization is a life-long process.

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# X

# DIALECTOLOGY

# A PARADIGM SHIFT IN DESCRIBING AND INTERPRETING THE DIALECT OF A METROPOLITAN AREA: OVERCOMING TRADITIONAL ATLAS SHORTCOMINGS

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Because a systematic study of Southern heavy initial stress on Romance words has not been made, two of my undergraduate students' suggestion that Southerners use a heavy initial stress when using Romance words as a noun--e.g., in *INsurance* and *UMbrella*--but not when the same word is used as a noun adjunct, as in *inSUrance coverage* and *umBREIla* stand (capitalized letters represent stress placement in these words), spurred me to determine answers to the areas listed below for a largely White middle-class Methodist Church in Memphis, whose members might be classified by traditional linguistic-atlas terminology as "worldy" rather than "insular":

1. The frequency which members use initial stress on Romance words such as *cement, insurance, umbrella, police, guitar, TV, mustache*, and *romance*;
2. The degree of stress variation, depending upon part of speech--whether the word is used as a noun, a noun adjunct, or a form of a verb;
3. The role that respondents' conscious awareness or unconscious awareness of what words are being tested in various testing formats plays in arousing heavy initial stress; and
4. Demographic factors, if any, which cause linguistic stress differences: age, sex, education, and birthplace.

Unfortunately, although data from LAGS cites different features of Southern English, LAGS does not report systematically enough information for the study of initial stress on Romance words, a very prominent feature of Southern English. First, some items in the present study--such as *guitar, insurance, mustache, romance*, and *TV*--written down by the LAGS fieldworker(s) were not elicited from all respondents, but items which the fieldworker(s) found phonologically or lexically interesting. Another problem causing lack of consistency in acquiring data for a certain word, such as *cement*, though asked of all respondents, is that some respondents gave synonyms or related words to the targeted word rather than the targeted word itself. These two factors caused many blanks in the data for the 10 Memphis informants in the LAGS.

Still yet, the LAGS worksheets do not indicate part of speech for responses nor enough of a context to determine part of speech, and the *General Index* (vol. 2) often does not segregate responses for a certain word by part of speech. For example, for the lexical item *cement*, the parentheses right after the heading states 414 responses using this word, but the word is labeled as *n/v/adj* with no further breakdown of responses by part of speech. See Table 1 which summarizes the problems with LAGS for the various words used in the present study:

| Word | # of Responses from the 1,121 Respondents | # of Responses from 10 Memphis Respondents | *Problem(s) of Interpreting the Data |
|---|---|---|---|
| 1. cement | 414 | 3 | #s 2, 3, 4 |
| cemented | 10 | 0 | #s 2, 3, 4, |
| cements | 1 | 0 | #s 2, 3 |
| 2. guitar | 29 | 0 | #s 1, 4 |
| 3. insurance | 37 | 0 | #s 1, 4 |
| insured | 1 | 0 | #s 1 |
| 4. mustache | 79 | 2 | #s 1, 4 |
| 5. **police | 390 | ***9 | # 4 |
| 6. romance | 2 | 0 | #s 2, 5 |
| romancing | 2 | 0 | #s 2, 5 |
| 7. TV | 24 | 0 | #s 1 |
| 8. umbrella | 920 | 10 | #s 4 |

*Legend for Problems with LAGS:

1. Item not a question posed to all respondents, but an item the fieldworker found phonologically or lexically interesting for the respondent(s) whom the fieldworker interviewed;
2. Item asked of all respondents but which elicited responses other than the lexically targeted item;
3. Item asked of all respondents but there was no response from one or more of the 10 Memphis respondents;
4. Part of speech not indicated on worksheet; also lumping together of parts of speech in the index for the item and not segregating responses by part of speech (e.g., *cement* said by 414 as *n/v/adj*);
5. Synonym or word related to the targeted item than the targeted item itself.

** A question posed only for the urban supplement section of the LAGS survey

***For the urban supplement questions, only 9 rather than 10 Memphis respondents participated.

Table 1: LAGS' Problems When Studying Eight Words for Southern Initial Stress

Another problem is that LAGS' binary analysis of age reports results dividing responses between ages 66+ and 65 and younger, which emphasizes only one way of seeing the age division, and the population tested definitely has a rural bias. In addition, when a metropolitan community is tested, LAGS seeks informants originally born in the city, untrue to the diverse origin of population true to any metropolitan community.

To determine variation dependent upon contexts--from the least to the most conscious awareness of words being tested--and also to determine frequency or consistency of heavy initial stress, the current study uses a modification of Guy Bailey's procedure (Bailey and Bernstein 1989:7, 11) of eliciting responses on the GRITS (Grammatical Investigation of Texas Speech) survey, whose format begins with a sentence completion task, followed by a reading of a story, and ends with a reading of a word and phrase list. The present study uses the same format, but different words and sentences, to see which of the above-named procedures best elicits the natural speech of the respondents. Bailey used minimal pairs in his listing of single words, but because the object of the present study is different from Bailey's, I listed single words--most of which were not minimal pairs--and phrases, where needed, for part of speech for the third task.

This threefold procedure is used in the current study, because Bailey thought he devised the testing of subjects so that there was movement from the least conscious and most natural and informal pronunciation to the most conscious, guarded, and formal pronunciation of words. For example, in my study, Part I--the sentence-completion task--an item testing whether the stress was on the initial or second syllable of *insurance* reads:

The man fortunately____________be covered by the insurance of his wife.
(might, might could)

Subjects would think that this question was a lexical or grammatical test rather than a pronunciation test. All the questions in this part request subjects to choose one of two expressions for each blank, a multiple choice of two expressions which are not really the point of what is being tested. Instead, each question surreptitiously contains a Romance word which is tested for subjects' pronunciation of the word. To elicit a more natural colloquial pronunciation, the directions ask subjects to read each sentence as if they are speaking to their 'oldest living relative'.

Theoretically, Part 2 , the reading of a 526-word passage entitled 'Mary Sue and Billy Ray', would invoke more conscious pronunciation of the words, because subjects are not distracted from the pronunciation of the Romance words with the multiple-choice task in Part 1. Moreover, many of the Romance words tested are repeated throughout the story several times to discover the percentage of times the words are stressed with a heavy initial stress, because studies since Labov (1982) have shown variation in dialectal pronunciation not only for context but also for frequency of use. In addition, to foster a more natural pronunciation, the directions ask subjects to read the story 'in a lively manner' so that there will not be a studied academic pronunciation of the words.

Finally, Part 3, the reading of the word and phrase list, is theoretically the most conscious and obvious task, because each word or phrase read for pronunciation is listed on a separate line. (The task was even more obvious in Bailey's testing, where he asked subjects to pronounce minimal pairs.)

Thirty respondents for the current study (18 males and 12 females ranging from the teenage years to the 80s) were selected from a largely white middle-class Methodist church in midtown Memphis, a congregation which averages between 200-225 for morning worship on Sundays. Persons were selected for various reasons: 1) leadership in the church--e.g., pastor, associate pastor, youth music director, or president of the high-school youth; 2) activeness in the church, as reflected in Sunday attendance or some activity of the church, such as choir, youth fellowship, or the church's annual big dinner-theatre; 3) some parents with their teenage children included to discover differences between the generations; and 4) willigness to participate. Although a number of Memphis-born residents were included--namely 13--the others, 17, came from other places. This situation reflects the actual situation in a real metropolitan community, and in this church in particular, where there is an influx of persons from surrounding areas and out-of state areas .

One of the subjects, a male, of 70 years, who was originally born in Nebraska and arrived in Memphis 50 years ago, proved valuable for comparison with the 29 Southerners. Another male in the 30s was born in Michigan, but arrived in West Tennessee by age 3, and was considered a Southerner in the analysis.

Table 2 cites the 30 subjects upon which this study is based:

| Subject | Age | Sex | Birth Place: Memphis | Birth Place: West TN | Birth Place: Other State | Memphis by What Age |
|---|---|---|---|---|---|---|
| 1 | 80s | F | Yes | | | |
| 2 | 80s | M | Yes | | | |
| 3 | 70s | M | | | Nebraska | 20 |
| 4 | 70s | M | Yes | | | |
| 5 | 70s | F | Yes | | | |
| 6 | 70s | M | Yes | | | |
| 7 | 60s | F | | Yes | | 6 mo. |
| 8 | 60s | F | | | Mississippi | 28 |
| 9 | 60s | F | | | Kentucky | 45 |
| 10 | 50s | M | Yes | | | |
| 11 | 50s | M | | Yes | | 2 |
| 12 | 40s | M | | | Mississippi | 24 |
| 13 | 40s | F | | | Virginia | 32 |
| 14 | 40s | M | | WT age 1 | Texas | 18 |
| 15 | 40s | F | Yes | | | |
| 16 | 40s | M | | Yes | | 32 |
| 17 | 40s | F | | Yes | | 18 |
| 18 | 30s | M | Yes | | | |
| 19 | 30s | F | Yes | | | |
| 20 | 30s | M | | | Louisiana | |
| 21 | 30 | M | | WT age3 | Michigan | 30 |
| 22 | 20s | F | | | Arkansas | 19 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 23 | 20s | F | | Yes | | 21 |
| 24 | Teens | M | Yes | | | |
| 25 | Teens | F | | | Florida | 2 |
| 26 | Teens | F | | Yes | | 2 1/2 |
| 27 | Teens | M | | | West Virginia | 6 |
| 28 | Teens | M | Yes | | | |
| 29 | Teens | M | Yes | | | |
| 30 | Teens | F | Yes | | | |

Table 2: Demographics

Interestingly, the results of the testing indicated a hierarchy of which Romance words were stressed on the first syllable. Table 3 reports the results, from the most to the least stressed on the first syllable, in terms of subjects saying the word with an initial stress at least once during the testing. The Nebraskan is excluded in the figures below because he did not arrive in the South as a child:

1. MUstache: 27 persons or 93.1% of 29 persons
2. ROmance: 27 persons or 93.1% of 29 persons
3. INsurance: 27 persons or 93.1% of 29 persons
4. UMbrella: 25 persons or 86.2% of 29 persons
5. CEment: 13 persons or 44.8% of 29 persons
6. GUitar: 10 persons or 34.5% of 29 persons
7. TEEVee: 3 persons or 10.3% of 29 persons
8. POlice: 1 person or 3.4% of 29 persons

Table 3: Hierarchy of Words with Initial Stress

Subjects' responses indicated that there was no difference between Noun and Noun Adjunct for heavy initial stress of words. Sometimes they would stress the Noun, and at other times, the Noun Adjunct, or both might be stressed. Therefore, results were collapsed for these two categories. Moreover, because Part 3 did not indicate the part of speech for *romance, cement, and police*, when they were listed separately, these words were eliminated in the tally of times respondents chose these words because they could be interpreted as either nouns or verbs in Part 3.

Table 4 reports the frequency subjects used for heavy initial stress out of all the opportunities given to stress the Romance word. Generally, with a few exceptions, frequency follows the results of which words were stressed at least once, as reported above in Table 4. Here is the data for frequency of heavy initial stress:

1. MUstache: Means: 6.2 out of 7 times or 88.5% of the time
(However, the median--the midpoint of responses--was even higher: 7 out of 7 times or 100%.)
2. ROmance: Means: 4.1 out of 6 times or 68.3% of the time
3. INsurance: Means: 5.8 out of 11 times or 52.7% of the time
4. UMbrella: Means: 3.7 out of 6 times or 62% of the time
5. CEment: Means: 3.7 out of 7 times or 52.8% of the time
6. GUitar: Means: 2 out of 7 times or 28.5% of the time
(However, the median--the midpoint of responses was even lower: 1 out of 7 times or 14.28%)
7. TV
as TEEVee, instead of as (TEEVEE, with both syllables stressed):
Means: 1 out of 6 times or 16.7% of the time
8. POlice: Means: 2 out of 4 times or 50% of the time

Table 4: Frequency of Words Stressed according to Times Word Cited

The first two items, *MUstache* and *ROmance*, I discovered, as the study progressed, were not only Southern but apparently also standard alternate pronunciations for American English in the nation, as revealed by American dictionaries: *Webster's Ninth New Collegiate Dictionary* (Mish 1991), *The Random House College Dictionary* (Stein 1980), *Webster's New World Dictionary* (Neufeldt and Guralnik 1988), and *The American Heritage Dictionary* (Berube 1982). I have also often heard newscasters and media celebrities from different parts of the country also stress the first syllable. The tabulated data of this study reveals that the Southerners in this study often used initial stress a great deal of the time on these two words.

Compared to *UMbrella* and *INsurance*, less than half of the 29 Southerners chose *CEment*, *GUItar*, *T-v*, and *POlice*. In fact, only one person said *POlice*. It would be interesting if another study using different Memphis populations would reveal whether the heavy stress on these words is more rural, class, or ethnically related.

Two of the words, *umbrella* and *police*, can be compared with the LAGS data, because there were enough responses from the Memphis respondents (10 for *umbrella* and 9 for *police*). The figures for these two words from Tables 3 and 4 compared with the figures from the LAGS data for Memphians are as follows:

*umbrella*:

Present Study: 86.2% or 25 of the 29 informants born in the South used heavy initial stress at least once out of all 6 opportunites to say the word. The means for using heavy initial stress for the word was 3.7 out of 6 possible times or 62% of the time.

LAGS: 5 or 50% of the 10 Memphis informants used heavy initial stress for the one opportunity given to use the word.

*police*:

Present study: 3.4% or only 1 of the 29 informants born in the South used heavy initial stress at least once out of 4 opportunities to say the word. The

> means for for this one person using heavy initial stress forthe word was 2 out of 4 possible times or 50% of the time.
> LAGS study: No person or 0% of the 9 Memphis informants used heavy initial stress for the opportunities given to say the word, for the targeted items *policeman, police station*, and *police sedan*, although some did say *PLICE* for *POlice*.

Although the percentages differ, the general picture is preserved in the two studies. Many more Memphians pronounce *umbrella* with a heavy initial stress. Hardly any or none at all pronounce *police* with a heavy initial stress.

Some insights concerning variation occurred from studying the results. For one, it seems that placement of the Romance word in a phrase or sentence may influence what is stressed. For example, in the very first sentence of the reading passage, which reads, ". . . She liked stories of romance, especially the Harlequin romances . . . ," 7 persons stressed both *romance* and *romances* on the first syllable, but 15 stressed only the first word, *romance*, on the first syllable without stressing the first syllable of the second word, *romances*. And there was no one who stressed the second word without also stressing the first word too. Perhaps some kind of a prosodic rule is involved.

Similarly, instead of stressing both syllables of *TV*, as indicated by the American dictionaries cited above, the 3 persons who put a heavy initial stress on the word without accenting the second syllable only did so when the word was a noun adjunct, as in *TV show* and *TV singer*, perhaps because of the difficulty of pronouncing three equally heavy stresses in a row: 1) TEE-, followed by 2) VEE, and then by 3) SHOW or the SING- of SINGer.

Another result concerning variation indicated that the verb received many fewer heavy initial stresses. Moreover, the form of the verb mattered: whether it was a main verb or a gerund. For *romanced*, for example, 14 Southerners said *ROmanced* some time in Parts 1 and 2, but 13 more, or 27 total, used heavy initial stress for the noun or noun-adjunct form of the word. And only 2 of these 14 persons saying *ROmanced* also pronounced the gerund as *ROmancing* in *Romancing the Stone*, the name of a movie. There was one exception, however, a person who said *ROmancing* without saying *ROmanced*. The hierarchy of responses from the least to the most responses in stressing the initial syllable is thus as follows: if *ROmancing*, the gerund, then *ROmanced*, the verb; if *ROmanced*, the verb, then *ROmance* as noun or noun adjunct.

Concerning other forms of romance, no one at all used initial stress for the adjectival form--*romantic*--and the adverbial form--*romantically*--in Part 2. Thus, initial stress is sensitive to part of speech.

Similarly, in comparison to 13 persons saying *CEment* as a noun or noun adjunct, only 6 said *CEmenting* when used as a gerund in Part 1 for *cementing the relationship* and only 5 persons said *CEmenting* when used as a present participle and the main verb in Part 2 in the verb phrase will be *cementing the crack*. The hierarchy of responses from the least to the most responses is as follows: if *CEmenting* as gerund or present participle as the main verb, then *CEment* as noun or noun adjunct. Only one person proved the exception to this rule.

Concerning *insurance*, 27 Southerners said *INsurance* at least one time (and even the Northerner did one time), but many fewer did for forms of the verb *insure*: no one at all used the heavy stress on the verb for the infinitive *to insure*, in Part 1, nor on the main verb in the verb phrase *are insured*, in Part 2, but 6 persons did so on the verb for the phrase insure for earthquake, an item in Part 3. If a person said *INsure for earthquake*, then the person also at least said *INsurance* some times as a noun or noun adjunct.

But even if there was the same form and/or part of speech of the word in the three parts of the instrument, at times subjects reacted differently as to when they gave a heavy initial stress on Romance words. While there were those who consistently gave a heavy stress through each of the 3 parts for some words, some used heavy initial stress only in Part 1; others used heavy initial stress only or mainly in Part 2; and still yet, some subjects placed heavy initial stress only in Part 3.

Those who tended to use heavy initial stress only in Part 1 probably fulfilled Bailey's intent of being deceived through the multiple choice options in the sentence-completion task as to the real intent of the testing. However, a number of subjects tended to give a careful and measured response because they read the sentence silently over for a long time, thinking which of the two choices would be most appropriate. Some of these subjects omitted heavy initial stress on Romance words in Part 1, but showed heavy stress on these same words in Part 2, when they were given the task to read without preparation the 526-word passage 'in a lively manner'. Without previous preparation, the impromptu reading task in Part 2 forced these subjects to give an unpremeditated response, a response which showed heavy stress on the first syllable, unlike their responses in Part 1. And even though some subjects tended not to give some words heavy initial stress in Parts 1 and 2, a few subjects gave a heavy initial stress on these same words in Part 3. Perhaps, when told that the word and phrase list was the last part of the instrument, they let their guard down, feeling relieved that the task was over. Thus, the tripartite instrument was valuable in providing different contexts when subjects felt comfortable enough to use a more natural informal response.

Bailey through personal communication stated that although he noticed colloquial pronunciations from subjects in his own investigation for Part 1 of his own instrument, he never made a formal analysis to discover whether more natural responses also came from the other parts of his instrument. Thus, the present study is a contribution in showing that it is possible for the other 2 parts of his instrument to elicit more colloquial and informal pronunciations.

Demographics did not play a variable in the words receiving initial heavy stress nor the frequency of the stress.

The present study is a contribution in controlling systematically the words to be uttered in different contexts and demonstrating implicational hierarchies dependent upon part of speech, word form, and perhaps even the prosodic pattern of the context.

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# XI

# HISTORICAL STUDIES, COMPARATIVE STUDIES, AND LANGUAGE EVOLUTION

# GRAMMATICALIZATION AND IDIOMATIZATION*

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## 1. *General Remarks*

Recently grammaticalization has been discussed extensively (see Heine et al. (1991), Traugott and Heine (1991) and Hopper and Traugott (1993)). Traugott and Heine (1991: 1) define grammaticalization as follows:

> Grammaticalization is the linguistic process, both through time and synchronically, of organization of categories and of coding. The study of grammaticalization therefore highlights the tension between relatively unconstrained lexical expression and more constrained morphosyntactic coding, and points to relative indeterminacy in language and to the basic non-discreteness of categories.

Hopper and Traugott (1993: 32, 61) mention 'reanalysis' and 'analogy' as giving rise to grammaticalization. The former involves linear, syntagmatic reorganization and rule change, and the latter involves paradigmatic organization, and changes in surface collocations and patterns of use. They try to explain the development of *be going to* from directional phrase to future on the basis of the interaction of reanalysis and analogy1).

Grammaticalization has, then, been discussed extensively. 'Idiomatization', on the other hand, appears sporadically in some literature (Leech (1983: 194), Glasër (1986: 19, 52), and Traugott and Heine (1991: 9, 129, 143-4)). Leech (*ibid.*) refers to the occurrence of hybrid sentences, such as *Shut the window, can you?* and *Let's have a look at the head, may I?* in the context of indirect illocution. The process of 'idiomatization' necessarily involves historical change - diachronic aspects which include social and psychological factors as well.

The aim of the present paper is first of all to discuss the interrelations of these concepts and then to argue for the validity of the concept of idiomatization in particular in the history of English by examining the examples of collocational change in 'do', 'make' and 'take', and other related phenomena. The examples are taken from *The Oxford English Dictionary*, *The Middle English Dictionary* and my collection.

## 2. *A Historical Sketch of 'do', 'make' and 'take'*

'Do' (OE 'don') was frequently used in Old English in the sense of 'perform and place', while 'make' and 'take' were hardly used in that period, and 'make' began to be used in Middle English under the influence of French 'faire'. In the course of the decrease of use and auxiliarization of 'do', the latter verbs took over some uses of 'do'. Examples:

a. 971 *Blickl.Hom*.39 Do we ... Drihtne þancas þe us þa wæsmas sealde.
b. 1477 *EARLE RIVER* (Caxton) *Dictes* 1 To gyue therefore synguler louynges & thankes
c. *1300 Cursor M.* 14480 Fra at time forth þay did þair pain at he and lazor war bath slain.
d. 1509 HAWES *Paston Pleas*. vi.(1845)25 Who wyll take payne to folowe the trace.
e. 1528 TINDALE *Wks*.(Parker Soc.)I.260. To make them think that they must take pains, and do some holy deeds.

Kuhn (1980: 5) says as follows: 'In Old English, however, *macian* and prefixed *gemacian* are very rare, while *don* (occasionally *gedon*) is common.' In his 1986 paper, Kuhn states as follows: '*Macian* and *gemacian* appear with increasing frequency in OE of the tenth and eleventh centuries.' Although he does not refer to 'take', on the basis of the citations in the OED, we can say that the verb began to be used frequently in Middle English. It follows, therefore, that in the Middle English period three verbs were used, but that they began to change their functions separately. 'Do' went in the direction of auxiliarihood, while narrowing its use and combination with nouns to some sets of words.

I investigated 'do+noun' combinations in *Malory Works* edited by Vinaver, and discovered two characteristics. One is that the verb was combined with nouns borrowed from French, such as 'battle 'service', 'despite', 'deed' and 'damage' in the order of frequency. The second characteristic is that the verb was in frequent combination with indefinite pronouns, such as 'all', 'nothing', 'what', and 'it'.

'Make' was used more frequently and began to combine with French nouns with suffixation, such as 'make argument/conclusion/description'. 'Take' was also influenced by the French verb 'prendre' (cf Prins (1952: 46)), and spread its uses.

According to Matsumoto's forthcoming paper, in the 'verbo-nominal' structure (i.e. 'verb+ deverbal noun combination), 'make' is by far most frequent of the three verbs in Middle English, followed by 'do' and 'take' in that order. However, my investigation shows that since the 16th century, 'do' began to be used less and less, and 'take' began to be used more frequently, although 'make' has been the most frequent verb through out the periods up to present. The decline of 'do' as a main verb corresponds to the gradual increase of 'do' as an auxiliary verb.

### 3. How does 'Idiomatization' Take Place?

It should be borne in mind that the following factors by no means claim to be exhaustive, nor do they have any priority in the process of idiomatization. They are both causes and effects.2)

### A) From Concreteness to Abstractness

This phenomenon has been observed in many cases. The case in point is that of prepositions which, having expressed 'direction', 'place', and 'time' concretely, have come to be used to express grammatical/abstract concepts, such as 'in despair', 'in place of' and 'set fire to'. Body part nouns such as 'foot' and 'face' are often transformed from concrete to abstract meanings in idiomatic expressions, as in

a. drag one's feet
a'. set foot on/in
b. set one's face against
b'. lose face

This change has been seen in the history of English. According to Brinton (1988: 185-234), verbal prefixes in Old English, such as *be-*, *for-*, *of-*, *ofer-* and *up-* had a concrete sense of 'direction, but they came to have abstract(aspectual) meanings in the course of time. As Ullmann (1963: 19) notes, this tendency is very general and is too well-known to deserve detailed explanation.

### B) De-categorialization of Nouns

In the examples given above, 'set foot on/in' and 'lose face', the nouns have lost their noun status, forming parts of the idioms. This loss of nouniness has much connexion with number and the development of the indefinite article 'a(n)'. According to Mustanoja (1960: 263), the indefinite article began to make frequent appearance in Middle English. In the *Paston Letters* (15th century epistolary collection), both forms are given as follows (Carstensen (1959: 105-12)):

a. to make claim/to make a claim
b. to make search/to make a search
c. to have answer/to have an answer
d. to make appeal/to make an appeal

C) Blend

According to Crystal (1991: 40), 'blend(ing) is a process in which two elements do not normally co-occur according to the rules of the language, come together within a single unit.' Bolinger (1975: 398) gives the following examples of blended idioms;

a. take umbrage to (take umbrage at+ take exception to)

b. keep track on (keep tabs on+keep track of)

The following examples were detected from my collection in connexion with idiomatic expressions:

a. I praye you take good heed to the letter þat ...
(Paston Letters)

b. ... wherefore take good heed to what I have showed thee ...
(Pilgrim's Progress)

c. ... the pillar that Christians erected for a caution to pilgrims that came after to take heed of entering into the grounds.
(Pilgrim's Progress)

In the phrase 'take heed of', 'to' was frequently substituted for 'of' particularly in Bunyan. This blend probably came from the meaning of 'heed' expressing 'regard' and 'attention' and take partial responsibility for the later idiom 'give/ pay attention to'.

D) Rivalry

In synonymic expressions, a new expression generally replaces the old one. In the history of English, the replacement of 'niman' by 'take' is well-known. Also Old English 'sellan' was replaced by 'give' (OE 'giefan'), and at the same time, 'make' began to be used, as the following examples

a. 1000 Ags.G. ibid., Him ne sealde nane andsware.

b. 1325 Leg.Rood (1871) þe messagers him gaf ansquare.

c. 1375 BAROUR Bruce II.60 Quhen thai hard nane make ansuer, Thai brak the dur.

E) Reanalysis

'Reanalysis' has been discussed quite extensively in the literature (Langacker (1977: 58), Lightfoot (1979: 98-115), Brinton (1988: 102-3). Traugott and Heine (I991: 167-70), and Hopper and Traugott (1993: 40-48, 61-2)). Langacker defines 'reanalysis' as 'change in the structure of expression or class of expressions that does not involve any immediate or intrinsic modification of its surface manifestation' (p.58).

As the following examples Show, 'advantage' was an independent noun in every sense.

a. But I will not on this occasion, take
the advantage of the great number ...
(Dryden)
b. We complained of advantages which the
men took of your youth ...
(Smollett)
c. To take an ill advantage of his absence.
(OED 'advantage' 5b.)

'Advantage'+ of NP as a whole was an object of 'take' in the examples above, but gradually in the formation of the idiom, 'take advantage of' as a whole has been understood as a transitive verb.

In the process of idiomatization of 'do', 'make' and 'take', as I mentioned before, 'make' and 'take' began to establish fixed combinations with noun objects, while 'do' underwent different processes of having both main verb and auxiliary functions. I will not go into the problem of the auxiliarization of 'do' except to point out that 'do' carried over its noun objects to 'make' and 'take'. 'Make' and 'take' did not become auxiliaries, but instead strengthened their idiomatic uses in the construction of 'verb+deverbal noun object'. The development of 'verbo-nominal structures (such as make a concession and take objection) which spread in the modern English period has been enhanced by these two verbs.

In this way, 'do', 'make' and 'take' started with the common process of lexicalization, but underwent the different processes of 'grammaticalization' in the case of 'do' and 'idiomatization' in the case of 'make' and 'take' and to a lesser extent, of 'do'.

I shall take another type of idiom as an example of 'noun+noun' idioms, such as neck and neck, face to face and body and soul. Neck and neck, for instance, can be considered as resulting from the following processes:

one's neck and one's neck
lexicalization
⇓

neck and neck
grammaticalization (determiner deletion and functional change from noun to adjective or adverb)
⇓
neck and neck
idiomatization (idiomatic meaning)

Lexicalization is the process of finding words for new concepts. Grammaticalization is the process whereby items and constructions come in certain linguistic contexts to serve grammatical functions (cf. Hopper and Traugott (1993: XV). Idiomatization is the process of finding the pattern and assigning a new meaning which cannot be deduced from the constituents.

In connexion with this process, Haiman (1985: 106-7) asserts that the greater the formal distance between X and Y, the greater the conceptual distance between the notions they represent, pointing out the extent of conceptual closeness of two ideas as follows:

(1) They share semantic features, properties, or parts.
(2) They affect each other.
(3) They are factually inseparable.
(4) They are perceived as a unit, whether factually inseparable or not.

Applying the criteria given above to 'noun+ noun' patterns, we can say that the deletion of determiners reduces the linguistic distance between nouns, and consequently the conceptual distance, resulting in the unification of concepts. Examining idiom patterns reveals that article reduction is the first step towards idiomatization syntactically and semantically (and conceptually). The consequent unification of concepts has close connexions with the varieties of noun and noun idioms, such as 'soul and body', 'hand by hand' and 'head to head'. What is interesting about these idioms is that they have developed a further function of emphasizer in addition to their adverbial usage.3) With the loss of literal meanings, they have come to strengthen their grammatical functions. It is also noted that such idioms consist of body part nouns in many cases, and this phenomenon is related to human conceptualization in view of the fact that they can be found in many other languages (cf. Fox (1981)). Typological research will bring more interesting facts to attention.

## 4. Conclusion

I have demonstrated the necessity of the concept of idiomatization together with grammaticalization by taking as examples the development of 'do', 'make' and 'take and 'noun+noun' idioms. To get a fuller understanding of the processes of grammaticalization and idiomatization, we must investigate more data both synchronically and diachronically.

## Notes

* I am grateful to Dr Sheila Hones for reading and making comments on an earlier version of the paper.

1) Samuels (1972: 58-60) uses the term 'grammaticisation', mentioning such phenomena as 'weakening of lexical meaning', 'rankshift' (i.e. concerning and regarding) and 'reallocation' (i.e. 'he is suffering from illness due to neglect - he is ill due to neglect.').

2) Hopper (1991: 22) mentions the following five principles of grammaticalization which overlap those of idiomatization to be discussed here.

(1) Layering -- Within a functional domain, new layers are continuously emerging. - This is more or less equivalent to my term 'rivalry'.

(2) Divergence - When a lexical form undergoes grammaticalization, the original form may remain as an autonomous lexical element and undergo the same changes as any other lexical items.

(3) Specialization - When grammaticalization takes place, choices that characterize an emergent grammatical construction become more limited.

(4) Persistence - In the process of grammaticalization, a form will be polysemous and one or more of its meanings will reflect a dominant earlier meaning.

(5) De-categorialization - Forms undergoing grammaticalization tend to become de-categorialized: i.e. nouns and verbs lose their morphological and syntactic properties.

3) Cf. Hopper and Traugott (1993: 41) "Words for body parts in particular often begin to function as emphasizers, as in talk one's head off, and work one's tail off.

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# GRAMMATICALIZATION AND DEGRAMMATICALIZATION

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## ABSTRACT

Grammaticalization, or the acquisition of a grammatical function, occurs in suffixes as well as in words. For example, the Latin suffix *-e:sc-*/*-i:sc-*, originally a marker of the present system, took on the function of the inchoative aspect. Moreover, grammaticalization is not unidirectional. Thus, the inchoative suffix lost its aspectual meaning and became a conjugational marker in the French *-iss-*/*-ir* and the Spanish *-ec-er* conjugations. That is, a suffix that originally marked the Latin present was first grammaticalized to indicate the inchoative and then degrammaticalized to serve as a marker for the second conjugation verbs in French and Spanish.

Grammaticalization is the acquisition of a grammatical function by a morpheme (Heine et al. 1991:3). Like Heine et al. (1991), many studies of grammaticalization emphasize the formation of phrases such as serial verbs or adverbial prepositional phrases, but grammaticalization also describes the development of suffixes that take on a grammatical role. Furthermore, I argue that what is changed in the language can be changed back again, and thus degrammaticalization is as natural and common a process as grammaticalization. This contradicts such claims as the argument of Heine et al. (1991:9), who suggested that grammaticalization is triggered by semantic suitability, salience, and frequency. These three factors are very similar to those proposed by psycholinguists for word recognition, which is triggered by 'content', 'stimulus quality', and 'word frequency' (Garnham 1990:68). Here, content corresponds to semantic suitability, stimulus quality reflects salience, and word frequency equals frequency. Such similarities are not surprising since the recognition of a grammatical word or phrase in history does not differ greatly from word recognition in an individual. Semantic suitability exists when the meaning is appropriate to a particular grammatical function. Salience indicates that the morpheme is easy to perceive. Finally, frequency shows that the new grammatical morpheme is not merely an idiom or a nonce-formation but a productive element in the language.

An example of suffixal grammaticalization is the Latin verbal inchoative suffix -e:sc-/-i:sc- as in appare:sco: '[I] begin to appear', derived from appareo: '[I] appear' (Lewis 1984:140). The colon (:) indicates vowel length in the Latin data. This suffix acquired the inchoative grammatical function within the history of Latin, since cognate suffixes in other Indo-European languages do not have the inchoative meaning. Since the Indo-European dictionary of Pokorny (1959) does not have a large number of Proto-Indo-European (PIE) verbs with an *-sk- suffix, we can safely assume that only a few Latin -sc- verbs go back to Indo-European. Furthermore, Pokorny's dictionary does not have a group of semantic inchoatives glossed with 'begin to' or 'become'. The index volume to the dictionary, Pokorny (1969), lists 34 -sc- verbs having 28 different roots, but only five of these roots have cognates in other Indo-European languages, and these Latin verbs and their cognates are not inchoative. This evidence supports the claim that most Latin -sc- verbs having Indo-European roots took the suffix within the history of Latin, where the suffix spread with the inchoative meaning as an internal development (Allen 1980:29-30).

How do semantics, perceptual salience, and frequency play a part in the adoption of a grammatical role by the -e:sc-/-i:sc- suffix? This is a question to be answered by the theory of grammaticalization. And how does degrammaticalization occur later if these same factors are still in play? It can be shown that the three motivating factors have different effects at different stages of the spread of the inchoative form.

The earliest Latin verbs in -sc- are presumably those that have cognates in other Indo-European languages, and these verbs, although they do not have inchoative meaning, are semantically compatible with the idea 'to begin' (Pokorny 1969):

| | |
|---|---|
| min-i:sc-itur | '(3 sg.) remembers' |
| com-min-i:sc-or | 'I think out, I contrive' |
| (g)n-o:sc-o: | 'I recognize, I perceive' |
| posc-o: | 'I ask, I demand' |
| hi:sc-o: | 'I yawn, I gape' |
| esc-it | '(3 sg.) will be' |

The verbs of mental activity and perception indicating 'remember', 'think out, contrive', and 'recognize, perceive' are verbs whose meanings show inchoative features. The active verbs 'ask, demand' and 'yawn, gape' could also have inchoative meaning in appropriate contexts. And the copula 'will be', while not primarily inchoative, could certainly be used with inchoative meaning.

However, there is yet another verb that is a more likely candidate for the originator of the Latin inchoative suffix. The concept of grammaticalization is very useful here in explaining the origin of the inchoative suffix from part of a verb. The translation of *cre:scere* is 'to grow', where the meaning 'inchoative' is already one of its semantic features. Furthermore, it is not a compound verb and is not derived from another verb. The element *-e:sc-* that becomes the inchoative suffix has salience, because its vowel is stressed and the cluster *-sc-* occurs in the present system while being absent from the perfect system. Finally, the verb is frequent and occurs with both animate and inanimate subjects. Characteristic principle parts of the verb are *cre:sco:* 'I grow', *cre:scere* 'to grow', *cr:evi:* 'I have grown' and *cre:tum* 'grown'. Since the *-sc-* occurs after a stressed vowel and is absent from the perfect system, it is salient in the present system. The occurrence of *-e:sc-* rather than *-i:sc-* agrees with the greater frequency of *-e:sc-* in Latin inchoatives, as shown by the fact that the reverse dictionary of Gradenwitz (1904) lists verbs in *-e:sc-* for 75.8% of 682 *-sc-* verbs cited.

It is important to note that meaning, salience, and frequency play different roles at various stages in the development of the inchoative suffix. At the earlier stages, as indicated by the dates of first attestation in parentheses, we look for evidence of the semantic feature [+INCHOATIVE] in verbs like *na:sci:* 'to be born' (204 B.C.), *hi:scere* 'to open, to gape' (184 B.C.), and *cre:scere* 'to grow' (169 B.C.). However, later attested verbs are more overtly inchoative in their semantic structure as exemplified by *viride:scere* 'to grow green' (397 A.D.), *gracile:scere* 'to become slender' (397 A.D.), and *penne:scere* 'to put forth feathers' (575 A.D.), where the verbs 'to grow', 'to become', and 'to put forth feathers' in the glosses are clearly inchoative features (Allen 1980:280, 287). As we shall see, this difference is reflected in the form as well as in the function. Salience also develops chronologically. Whereas the earlier attested verbs often share a long vowel between the root and the inchoative stem suffix, as in *na:sci*, *hi:scere*, and *cre:scere*, the later verbs regularly show a clear formal demarcation between the root and the suffix *-e:sc-*, and in *virid-e:scere* 'to grow green' < *virid-is* 'green', *gracil-e:scere* 'to become slender' < *gracil-is* 'slender' and *penn-e:scere* 'to put forth feathers' < *penn-a* 'feather'. Frequency also differs at different stages of the spread of the inchoative, especially if we examine the frequency of inputs and outputs. For example, whereas verbs supply the roots of inchoative verbs in the earliest stages, nouns and adjectives furnish the roots in later stages. Besides being in the older group of inchoatives, the deverbal inchoatives more often form prefixal compounds (Allen 1980:69). This tendency is not surprising since the productivity of prefixes often increases over time, and the adverbial meanings of prefixes are more suitable for verbs than for nouns. Such frequency factors cause greater semantic variation in the deverbal inchoatives and thus ultimately favor the breakdown of the semantically inchoative verb suffix (Allen 1980:70-71).

Here, we begin to see how meaning, salience, and frequency can act in different ways and beyond a certain threshold to break down the inchoative pattern that had been previously built up. This breakdown is degrammaticalization, which leads to the lexicalization of the inchoative suffix as part of the conjugation. Let us define degrammaticalization as the opposite of grammaticalization and thus the loss of grammatical function by a morpheme. In a very useful article on the subject, Ramat (1992:549) presents examples of degrammaticalization and locates them along a spiral path leading from lexicon to syntax to grammar and back to lexicon. The first part of the spiral path is grammaticalization, while the last part is degrammaticalization.

Since other authors have usually stressed grammaticalization, it is necessary for this paper to emphasize degrammaticalization and to show that the mechanisms of degrammaticalization are similar to those of grammaticalization. Also, degrammaticalization plays the historically useful role of producing interfixes, semantically empty morphs that elaborate paradigms and protect the phonetic forms of stems. French -iss- and Italian -isc- are examples of interfixes that resulted from the degrammaticalization of the inchoative suffix (Ramat 1992:552).

It is certain that meaning plays a role in grammaticalization, since the inchoative suffix spreads to stems that lend themselves to inchoative meanings. For instance, the inchoative suffix attaches to stems that refer to light, emotional states, life stages of plants, and developmental stages of humans. All of these concepts have beginnings and durations in time, so they are semantically compatible with the inchoative meaning. Here are examples of such denominal verbs with the date of first attestation and the derivational origins (Allen 1980:280-284):

lu:ce:scere 'to begin to shine' 184 B.C. < lu:x 'light'

quie:scere 'to rest, keep quiet' 159 B.C. < quie:s 'rest, calm'
flo:rescere 'to begin to blossom' 43 B.C. < flo:s 'flower'
iuvene:scere 'to reach the age of youth' 8 B.C. < iuvenis 'youth'

Although some deadjectival verbs have later first attestations, they follow a similar semantic pattern of meanings that indicate a state. For example, the following deadjectival verbs refer to light, size, life stages of plants, and developmental stages of humans (Allen 1980:282-284):

cla:re:scere 'to become bright' 55 B.C. < cla:rus 'bright'
grande:scere 'to become great' 55 B.C. < grandis 'big'
ma:tu:re:scere 'to ripen' 44 B.C. < ma:tu:rus 'ripe'
sene:scere 'to grow old' 8 B.C. < senex 'old'

Since the adjectives indicate states, they are semantically suitable for inchoative endings that form deadjectival verbs which mean 'to become [ADJECTIVE]'.

Among deverbal verbs, the semantic pattern begins to break down, since some verbs become inchoative because of conjugational form rather than semantic meaning. Or, looking at the verbs as a whole, we can say that the earlier semantic pattern begins to vary greatly as deverbal inchoatives are formed for morphological, rather than semantic reasons. It is important to recall that the earliest verbs, such as no:scere 'to recognize' and na:sci: 'to be born', used the -sc- suffix for the morphological purpose of distinguishing the present system from such past forms as no:vi: 'I recognized, I know' and na:tus sum 'I was born', so that these -sc- forms are not semantic inchoatives deriving from corresponding simplex verbs. Thus, these survivors from an earlier stage of the language provide a nucleus for degrammaticalization of the inchoative suffix. It should also be mentioned that these verbs are very frequent and that the suffix is salient, since it occurs in the stressed stem-syllable of the verb.

In a stimulating article on degrammaticalization, Ramat (1992:552) claims that the -sc- suffix 'was applicable to every verbal base whose meaning could bear inchoative and/or intensive sense'. I would counter that the -sc- suffix overextended itself to become attached even to verbs that would not take an inchoative or intensive meaning. It is true that some verbs took on the inchoative ending for semantic reasons, as when stative verbs in -e:re became inchoatives in -e:scere, exemplified by appare:re 'to appear' > appare:scere 'to begin to appear, to appear'. But it is significant that the inchoative form appare:scere can have the same meaning as the simplex verb appare:re because such synchronic variation provided a path for future developments.

Other verbs showed transitive alternate meanings. In a very helpful discussion, Blaylock (1975) mentions such transitivizations of the inchoative form in Late Latin. For example, the verb sue:scere can be either the inchoative 'to become accustomed' or the transitive and causative 'to accustom' (Allen 1980:81). Many transitivized inchoative forms indicate such emotions as fear. For example, treme:scere is both intransitive 'to begin to shake' and transitive 'to tremble at' (Allen 1980:82-83). Another source of transitives is compounding, since there are pairs of verbs like in-ole:scere 'to grow in, implant' and ole:scere 'to grow (intransitive)' or il-lu:ce:scere 'to grow light, to shine upon' and lu:ce:scere 'to begin to shine' (Allen 1980:84).

Still other verbs took on the inchoative form as part of the conflation, or reduction, of Latin conjugations to fewer conjugations in Romance languages. Modern Romance languages such as French and Spanish have fewer conjugation classes than Latin, and there were several changes that brought this about. Clearly, just as some -e:re verbs became -e:scere verbs, i-stems in -ere and -i:re verbs became -i:scere verbs. For such verbs, the variety of conjugations thus decreased, since the inchoatives all have infinitives that end in -ere. Moreover, the diversity of forms diminished even further as Italian and French adopted the -i:sc- suffix while Spanish preferred -e:sc-. Other verbs moved into the first conjugation in a parallel development of an affix chain so that, for example, frequentative-intensive verbs in -ta:re replaced other forms with the same root. An example of this kind of merger into the first conjugation is shown by the history of canere 'to sing', which gave way to canta:re 'to sing' in Latin and in Romance derivatives. It is important to note that the frequentative-intensive meaning disappeared from canta:re 'to sing', which is synonymous with canere, just as the inchoative meaning disappeared from -e:scere and -i:scere in Romance languages. Moreover, such bleaching of the meaning of a suffix which simplifies the morphology also occurs in the noun system, where the diminutive suffix no longer indicates smallness but simply inserts the noun into the first or second declension, the most frequent form classes for nouns. For example, the diminutive of Latin auris 'ear' was auricula 'ear-lap, little ear', where the suffix -icula meant 'little'.

The Romance reflexes of the diminutive form no longer have diminutive meaning, for French oreille and Spanish oreja mean simply 'ear', even though both are derived from auricula. This is evidence that in Vulgar Latin the diminutive suffix had lost its grammatical meaning to become degrammaticalized in the same way as the inchoative suffix did (Allen 1980:93-94). Thus, degrammaticalization of a suffix occurred both in nouns and in verbs, and such parallel developments argue strongly in favor of degrammaticalization as a natural process in language history.

Not only the occurrence of degrammaticalization but also the mechanism of the process support the claim that both degrammaticalization and grammaticalization have played comparable roles in the development of Romance languages. Let us examine the part played by semantic suitability, salience, and frequency in degrammaticalization, since, as we have mentioned, Traugott and Heine (1991:9) consider these three factors as keys to grammaticalization. Semantics has a negative role in the degrammaticalization process, since it is the loss of meaning that results in degrammaticalization. It appears that when a productive meaningful suffix extends beyond roots that have suitable meaning, it loses its primary meaning. Thus, the inchoative suffix extended beyond its semantically appropriate threshold to verbs where it added no meaning. This process was encouraged by the existence in the language of -sc- verbs that did not have inchoative meaning, either because they were from an older stage of the language before grammaticalization occurred or because they developed new meanings when some -sc- verbs became transitive and causative. Since grammaticalization is acquisition of grammatical meaning while degrammaticalization is loss of grammatical meaning, it is not surprising that lack of meaning is crucial to the second development. That is, meaning plays a role, but a different role, in the two processes.

In contrast, salience and frequency are important to both processes in similar but not identical ways. While the inchoative suffix form is salient in being stressed, the verb root is also salient, and the verb root is preserved from stem alternations that it would otherwise undergo. For example, Spanish cuenta '(3 sg.) counts, tells' and contar 'to count, tell' show a root variation that is lacking in acontece 'it happens' and acontecer 'to happen'. Frequency plays a role because, while the inchoative conjugation is somewhat frequent, it is less frequent than the denominal first conjugation. It is not surprising that a typically deadjectival conjugation, the inchoative paradigm, has fewer verbs than the denominal conjugation, since adjectives are less numerous than nouns. Thus, salience in other parts of the word and frequency in other parts of the lexicon are significant in degrammaticalization. Since such factors help to cause both grammaticalization and degrammaticalization, it is reasonable to argue that degrammaticalization is as natural a process as grammaticalization.

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# SOUNDING AND FLYTING THE ENGLISH AGONISTIC INSULT: WRITING PRAGMATIC HISTORY IN A CROSS-CULTURAL CONTEXT

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The diachronic analysis of speech acts has been hailed as an important frontier of historical pragmatics (Stein 1985). In pioneering work, Brigitte Schlieben-Lange (1983) demonstrates that speech is a genre having its own historiography. She therefore advocates the writing of historical accounts of individual speech-act forms, an especially productive practice when applied to English illocutions. In the genre of promising in English, for example, we witness pragmatic change over time: the single, sentence-length utterance found in Old English is ultimately transformed, via grammaticalization, into a larger stretch of discourse in Present-Day English (Arnovick 1994). Diachronic analysis extends as well to speech events, bundles of historically-associated, individual speech acts.

As I will argue, a limited pragmatic account can be constructed for the speech event of the agonistic insult in English. Even though the influences upon the tradition are disparate and originate in different cultures, from the point of view of the language, we can identify a recurring English speech genre whose 'disjunctive' history (Hughes 1991:viii) includes both the heroic 'flyting' of the Anglo-Saxon warrior and the competitive 'sounding' of the African-American youth. In the case of the agonistic insult, cultural grounding, as much as structural form, changes over time. Clearly a myriad of cultural factors support this multi-act event. I hope merely to suggest here the significance of oral context in reconstructing a pragmatic history. If we approach the oral phenomena as cultural behavior, we can draw a connection between the two linguistic traditions.

Before exploring their illocutionary genre, let me begin with a few comments on the theoretical basis of my investigation. In arguing for the existence of an English speech event I will pursue a pragmatic rather than formal comparison. Because basic cultural differences in the origin and function of speech may underlie structural similarities, pragmatic analysis can precede a comparative structural analysis and at the same time facilitate cross-cultural comparison (Parks 1990:166). It can also reveal common functions disguised by structural dissimilarities. In turn, historical pragmatics can place cross-cultural evidence derived in diachronic perspective.

Historical pragmatics is an interdisciplinary linguistic approach that utilizes a combined socio-historic and scientific methodology. In 1985 Dieter Stein champions this method, calling for sociological accounts of linguistic phenomena such as pragmatic changes within speech genres. Historical pragmatics represents an advantageous macro approach in sociolinguistics, Stein argues. In contrast with a micro approach which considers individual items of linguistic change in light of social and stylistic meanings, a macro approach concerns itself with the ways in which social changes effect changes in language structure as a 'set of semiotic techniques' (Stein 1985:347-348). We can construct a macro account of English verbal dueling or agonistic insult competition by assessing the speech events found in the language within the cultural contexts in which they occur.

The story of this English speech event is commonly but superficially recognized. Geoffrey Hughes summarizes its appearance in English:

> [t]he fascinating convention of ritual insult known as *flyting* has a disjunctive history, flourishing in Viking times, dwindling away in Middle English, reviving as a Scots literary genre in the Renaissance, and then largely petering out in Modern English, although a continuation can be seen in the cognate practice of 'sounding' in black American English (1991:viii).

Under closer examination we will see that the history of the generic event I am calling the agonistic insult is shaped by the larger forces of agonistic orality. In order to observe this underlying force we must scrutinize its cultural conditioners, however. While much valuable research has been conducted on aspects of each tradition, it has yet to be tied together productively within a diachronic conceptual framework. An interdisciplinary approach will allow me to synthesize disparate literature from linguistics, ethnography, anthropology, folklore, literary history, and literary criticism. Whenever possible in my review, I will incorporate insider-studies, arguably the best way to approach a culture different from one's own.[1]

Increasingly it has become clear that a purely 'linguistic' analysis of African-American verbal behavior is insufficient (e.g. see Abrahams 1976). As Karl Reisman stresses, spoken traditions 'participate in and express larger meanings in the society which uses them' (1989:110). Speech events must be evaluated within their social contexts if they are to be interpreted accurately. Ethnography offers a useful tool for achieving this understanding. Its goal is to identify the function of communication within a community (Abrahams 1976:14).[2]

Ethnographers studying Black English recognize the centrality of an oral dynamic within African-American speech communities. The origins of African-American orality have been traced to an African homeland. Modifying a Chomskyan model, Geneva Smitherman posits an underlying level of mental, cultural, and philosophical structures that modern surface representations of various African traditions have in common (1977:74-75). Smitherman argues that this common African worldview persists to large degree among people of African descent living in the United States. A main feature of this mindset is a high estimation for the spoken word and oral tradition. Despite widespread literacy, verbal eloquence is often more highly valued than the written word and a literate tradition, according to Smitherman (1977:75).[3]

The dominance of orality and oral perspective is by no means limited to African tradition, of course. In important recent work, Viv Edwards and Thomas Sienkewicz (1990) draw a connection between 'Rappin' and Homer'. The two authors apply the insights of Milman Parry (1971) and Albert Lord (1960) to reveal common ground for an oral world that extends across the disparate cultures of the ancient Greeks, the modern African Americans, and the 'pre-literate' Anglo-Saxons. Many of the oral acts of 'good talkers' (those accomplished in oral performance) are common to the oral world itself rather than to a specific oral culture. In fact, Edwards and Sienkewicz (1990) contend, pragmatic similarities are likely among individual manifestations of a common oral genre.

Theoretically a basis for comparison exists among oral events and genres. Practically, however, complex issues appear in the way of comparison. Are we likening the incomparable by comparing an oral event read (i.e. recorded) in an archaic poem like *Beowulf* with one heard in verbal competitions on twentieth-century street corners? Is the performance containing each event so different that it prevents further comparison? Solutions lie in the interpretive stance adopted. If speech events are performed for a listening audience, they ought to be considered art, Carolyn Bins observes (1972:77-78). Bins therefore classifies the 'contemporary stylized speech events' of African Americans as oral poetry (1972:77). The insights of both linguistics and folklore should be applied to its study because this oral art-form is also 'an act and genre of speech' (Bins 1972:76). A methodology grounded in sociolinguistic assumptions about language as cultural behavior can thus facilitate interpretation of both Old English and Black English speech events as creative performances.

Such a broadened approach allows us to define a field of comparison. In doing so, literate assumptions must be self-consciously examined so that selective perceptions do not obscure oral realities. For, '[t]he Western literate distinction between "performance" and "ordinary conversation" is blurred by ... [a] wide range of different speech events, both formal and informal' (Edwards and Sienkewicz 1990:15). Deference to insider insights, however, helps avoid 'observer's paradox', a common pitfall when literate observers confront oral phenomena (Edwards and Sienkewicz 1990:3).

The problem of comparing a written text with an oral one constitutes a related obstacle. It involves isolating medium from content. If we are going to determine how certain manifestations of orality are common to the African Americans and the Anglo-Saxons, we need to pin down precisely what is meant by orality and oral tradition. This determination becomes problematic because much of what is considered 'oral', particularly ancient material, survives only in written form. And 'oral literature' constitutes a contradiction in terms, as Walter Ong points out (see Ong 1982:10-15). Scholars attempting to separate strands of oral and literary processes within a written text thus face a 'labyrinthine tangle' (Parks 1986:659; cf. Lord 1960 and Parry 1971). Richard Martin has argued, however, that the literary representation of speech retains the essential orality of that speech: dialogue, in essence, provides direct access to orality in a written text (1989:10). Insofar as the Old English and the Black English oral events are spoken and are represented as speech, both contain speech acts and can be compared on that basis. The pragmatic study of speech acts opens a window on spoken orality regardless of its presentation.

Having recognized the properties the two oral events share, we can begin their comparison by reviewing the pragmatics of each. The cultural backdrop of each along with its illocutionary context will be highlighted. To emphasize the discontinuous nature of the English speech genre, I will begin with a treatment of the modern phenomenon. Sounding grounds itself in African-American cultural and linguistic traditions called 'signification'. Working from the perspective of the ethnographer trained in folkloristic performance analysis, Roger Abrahams (1976) identifies a continuum of speech events within an African-American speech community. At one end of this continuum, verbal interaction is private and informational; at the other end, it is public and playful (Abrahams 1976:41-42). It is the verbal activity of play that subsumes the various acts of 'signifying' (Abrahams 1976:40).

Signification play must be understood within its social dimension (Folb 1980:92). As Abrahams (1976) observes, this verbal play, like any other kind of play, exists in opposition to the real world. The most successful play strikes an ambivalent balance between seeming seriousness, which with respect to the game is inherently unsafe, and obvious pretense, which is inherently safe. Successful play comes dangerously close to violating the boundary of pretense, as a result (Abrahams 1976:40-41). Verbal contests constitute games, Edith Folb agrees, but she emphasizes that the point of playing these games is actually serious: words are 'tools for power and gain' (1980:90). The rewards can be psychological (e.g. self-esteem), but can also be material (e.g. money), physical (e.g. avoidance of violence), and social (e.g. status). In short, words act as capital in an important form of social interaction and negotiation.

Blurring the line between reality and pretense, signifying behavior represents a general rhetorical strategy that is shared by a number of speech events (Abrahams 1976:51).[4] 'Sounding' is a particular signification strategy through which the expectation of verbal play is expressed directly. This 'style of competitive word play' is perhaps best known through a game called 'playing the dozens' (Abrahams 1976:19). Because the game is so well documented I will use it to exemplify sounding in the current study. According to Thomas Kochman, its characteristic exchange of ritualized insults marks the verbal dueling as play (1987:234). Only when the insults move from ritual to personal (i.e. real) does tension increase and the play edge toward the borderline of absolute seriousness (Kochman 1987:236-237).

The verbal dozens has been classified as a strictly secular subcategory of the signification mode (Smitherman 1977:128-131). Usually the game is played by adolescent African-American males, although some black females as well as white teenagers of both genders have been known to participate in the activity (Majors and Billson 1992:91).[5] The mode of discourse has as the ostensible object of its abuse a relative of the person whom the talker addresses (Smitherman 1977:131). By analogy, however, the insult is directed at the hearer rather than his relative. As Smitherman reports, the purpose of playing the dozens -- whether for fun or for 'viciousness' -- is to better an opponent with caustic, humorous insults (1977:131). An exchange recorded by William Labov illustrates the process:

> *David*: Your mother so old she got spider webs under her arms.
> *Boot*: Your mother so old she can stretch her head and lick out her ass (1972:312).

One fundamental rule holds for the delivery of insults: the insult 'must not represent an accurate statement of reality' (Smitherman 1977:133-134). The context of this discourse of insult is restricted, therefore. The insults must, Smitherman observes, be taken 'at face value'. While they are not supposed to be taken seriously, the point nevertheless can be to 'put somebody in check' and to make that person think about (and possibly correct) the behavior signified (Smitherman 1977:119;120-121). The advantage of the contextual rule requiring non-seriousness is that the opponent is allowed to save face while at the same time the speaker is allowed to insult without being responsible for giving offense. There exists a continuum between truth and falsity within the genre of verbal abuse. The sharpness of the abuse depends on how closely it edges toward an accurate reflection of reality without exceeding the safe veneer of fiction.

Personal, individualized statements work best as insults, but they also have the greatest potential to incite violence. Ritualized or formulaic insults are the more conventional weapon in the sounding game. The propositional content of the former differs from the latter. To satisfy the formula, typically

> [a]ccusations are made about the opponent's committing incest with his sister or mother, passive homosexuality is inferred, cowardice is suggested, taboos related to cleanliness are said to have been broken, and personal defects such as inferiority, stupidity, or crossed eyes are played upon (Foster 1986:216).

The subject matter is exemplified in a sound collected by Labov:

> I hate to talk about your mother, she's a good old soul
> She got a ten-ton pussy and a rubber asshole (1972:307).

Delineation of topics may function to limit the invective as well as aid composition. Because even ritual insults maintain a destructive power, abusive words seem to be used sparingly (Edwards and Sienkewicz 1990:113).

Another essential difference between ritual insults and personal insults manifests itself in the appropriate response to each, in Labov's analysis. Whereas a ritual insult requires a response in kind, a personal insult demands a formal denial or mitigating excuse (Labov 1972:335). A boast sometimes completes the verbal defense. 'Offense is ... met by offense' for ritual insulting (Kochman 1987:233), then, while personal insults produce 'dyads of interaction' (Labov 1972:335). Offensive behavior deteriorates into defensive behavior (with the personal insults in 6 and 8) in the following exchange offered by Labov:

> 1) *David*: So your ... so then I say, 'Your father got buck teeth'.
>
> 2) *Boot*: Aw your father got teeth growing out of his behind!
>
> 3) *David*: Yeah, your father, y-got, your father grow, uh, uh, grow hair from, from between his, y'know.
>
> 4) *Boot*: Your father got calluses growin' up through his ass, and comin' through his mouth.
>
> 5) *Boot*: Your father look like a grown pig.
>
> 6) *David*: Least my-at least my father don't be up there talking uh-uh-uh-uh-uh-uh!
>
> 7) *Boot*: Uh-so my father talks stutter talk what it mean?
>
> 8) *Boot*: At least my father ain't got a grey head! His father got a big bald spot with a grey head right down there, and one long string ...
>
> 9) *David*: Because he' old he's old, that's why! He's old, that's why! ...
>
> 10) *Boot*: ... and one long string, that covers his whole head, one, one long string, about that high, covers his whole head (1972:331-333; cf. Kochman 1987: 236-237).

Although the denials in 7 and 9 represent a shift from dueling to quarrelling in terms of Labov's rules, Kochman argues that actual sounding play often incorporates ritual/personal and offensive/defensive polarities (1987:237).

Whether ritual or personal insults are flung, verbal antagonism need not result in physical violence. Kochman (1981) acknowledges general cultural conventions that join with oral traditions to keep violence in check. No words to actions continuum between verbal and physical attack necessarily exists for the players in the African-American community (Kochman 1981:48). This is not to say that physical blows never follow angry words, but only that arguments can be distinct from fights. Verbal aggression can be and frequently is an end in itself. In fact, verbal dispute is viewed as a constructive way for people to reconcile personal differences (Kochman 1981:58). Its cultural framework proves key to the operation of sounding once again.

The game has formal requirements as well as pragmatic ones. Labov's (1972) well-known analysis of their formal properties need not be summarized here. We need only note the conventional nature of their form. The structure of the individual sound is fairly conscribed, the pattern of their delivery and return equally formulaic (Labov 1972:334-350). Spoken in verse, usually rhymed couplets, a series of ritualistic initiations and responses commences. Although rhyming represents a challenge to be overcome by skill, at the same time it reinforces the artificial construct of the game and serves a mnemonic function. Richard Majors and Janet Billson suggest additionally that rhyming in the dozens may veil sexual and pornographic material from adult scrutiny (1992:95).

While these rules focus on the sounding opponents, the two adversaries are not the only participants in the game. The audience listening to the competition also plays an essential role. Following the hurling of the first insult, Abrahams notes, onlookers cheer or jeer in order to encourage eloquence (1962:209). Or, as Majors and Billson put it, the crowd causes the players to 'rev up to a brilliantly intense exchange' (1992:97). Kochman (1970) demonstrates that the group exerts a fundamental control over the game itself. The audience imposes an internal limit on the game, marking it as play and invoking its rule and order.

Their laughter and involvement strengthen the artificial world of the speech event even while their praise or ridicule motivates the players (Kochman 1970:160-161). More basically, as at any oral event, the audience actually determines the performance. An interactive art, the performance is shaped as both audience and talkers respond to each other. For this reason, there is a uniqueness to each event despite formulaic and ritualistic elements.

In exchange for their involvement, Kochman submits, the audience receives the pleasure of observing a game whose success they have helped create (1970:161). Often the main function of the verbal interaction is amusement (Edwards and Sienkewicz 1990:115). On these occasions, what is said is less important than how it is said. Eloquence is almost always the point of the competition, not offense. Its entertainment value must not be underestimated (Dollard 1939:13-14). Sounding proves a dynamic force which moves its audience (Bins 1972:90).

In the last analysis, sounding is not an isolated linguistic activity. It appears within a continuum of speech events whose related pragmatics warrant attention. Alongside the event of sounding is the related activity of boasting or bragging. This self-proclaiming behavior represents a 'subtle combination of the expressive and the rhetorical' (Edwards and Sienkewicz 1990:101). Humorous exaggeration therefore characterizes much of the conventional boasting heard in the African-American community (Edwards and Sienkewicz 1990:106). At times these self-assertive boasts border on challenge; at others they move toward self-deprecation or braggadocio. The behavior is not always to be taken literally. Again, the rhetorical value of the speech may be its main aim (Edwards and Sienkewicz 1990:102-103; cf. Kochman 1981:63-73). Like sounding, boasting often occurs in an exuberant battle of wits and words.

While the larger event may be characterized as sounding or bragging, at times the dividing line between individual sounds and boasts blurs. In sounding, insults often embed themselves in boasts and vice versa, as is seen in the following sound:

> I fucked your mother on top of the piano
> When she came out she was singin' the Star Spangled Banner (Labov 1972:308).

Overall the perlocutionary effect of such utterances is to mark the hearer, but this signification is accomplished through a skillful blend of insult and boast.

Ethnographers have attempted to understand these verbal activities in their broadest social context and to explain the continuing popularity of the performances. Generalizing, Edwards and Sienkewicz conclude that stylized insults and boasts provide opportunities for any talker to 'assert personal identity'. At the same time, however, a social need is fulfilled:

> [i]n its fullest contexts, then, verbal abuse can be viewed as a social balancing act, as a combination of jealousy and admiration for the powerful, in which violent words are used to prevent violent actions against the socially successful and prominent (Edwards and Sienkewicz 1990:122;123).

Others have interpreted the practice more specifically as an outlet for racial and familial tensions. Entertaining the theory that the dozens originates during the period of slavery, for example, Majors and Billson suggest that although the game may have allowed field slaves to taunt pampered house slaves, it probably served a more general purpose. This verbal exercise may have trained an enslaved people to keep 'cool' in the face of constant and 'insidious insults on their dignity' (Majors and Billson 1992:98-99; cf. Levine 1977:350ff.). Because the game continued to aid the young African-American male in accommodating himself to a world in which he still needed to remain cool, the dozens is adapted to modern, urban street life (Majors and Billson 1992:101-102; cf. Kochman 1969:28-29).[6]

In light of its social significance, researchers have wondered whether this oral form is an unparalleled art. Majors and Billson argue that the dozens is 'a unique cultural phenomenon that has developed in many African-American communities' (1992:91). Indeed, evidence for an immediate African source for the African-American sounding game has been widely recognized. Many parallel traditions are known among people brought to America as slaves. In traditions reviewed by Herbert Foster, insults to a man's mother are particularly likely to initiate or to escalate verbal contests (1986:227-228). Donald Simmons (1963) locates a specific source for the verbal game in a curse tradition nurtured among West Africans. Tracing its function, Majors and Billson link the game to a long-standing verbal tradition through which masculine toughness is established and celebrated (1992:91-92). Abrahams (1983), on the other hand, credits the African homeland with instilling a more general estimation of eloquence which exceeds any generic manifestation such as sounding. 'There has surely been a continuity between New World speechmaking and African expressive patterns', he concludes (1983:21). Therefore, along with Walter Edwards (1978), he traces these expressions to Afro-America, Guyana, the West Indies, and other African settlements in the New World.

Consensus, then, is that modern African-American traditions originate on the African continent. While crediting African claims for the African-American behavior, William Elton urges us not to ignore the 'wider world setting' of sounding (1950:233). Sounding games seem to possess analogous versions in other traditions. Noting the parallels in other cultures, John Dollard reveals non-African as well as African analogues for the speech events (1939:18-19). Anthropologists and folklorists report ritualized joking and insult routines among the Aleutian and Greenland Eskimos, for instance. An Arabic version of the dozens is also said to exist and Germanic analogues occur in the Norse Eddic poetry (see Foster 1986:227-228). In short, African sounding behavior may represent African manifestation of a large and pervasive oral tradition.

Clearly sounding represents a cross-cultural phenomenon (cf. Parks 1990:8). Old English flyting should also be included among analogues to sounding and the verbal dozens, Elton maintains (1950:233). Ward Parks (1990) confirms the generic identity flyting and sounding share. Placing flyting activity within a wider context, he concludes that it is 'one of the most universal of all

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speech genres' (1990:184).

A definition of flyting aids comparison and contrast. Parks defines the oral genre as 'agonistically styled verbal disputation with martial overtones' (1990:6). More descriptively, Carol Clover tells us that flyting events 'consist of boasts and insults in varying proportions, with an admixture of threats, curses, or vows' (1980:453).

While separate traditions of insulting and boasting may have existed in Germanic, Clover observes, a conflated insult-boast tradition alone appears in the extant literature (1980:445; cf. Swenson 1991). Scholars who try to show separate traditions ignore the evidence of literary record wherein flyting clearly manifests the combined tradition, Clover argues. She therefore reconstructs a Germanic flyting genre in which the insult-boast speeches occur in traditional form and arrangement. Indeed, flyting becomes so conventional in Germanic that it consists of commonplaces and clichés (Clover 1980:445-446).[7] Numerous Norse examples remain, but Old English evidence proves representative. The Unferth episode from *Beowulf* (lines 499-610) exemplifies the Germanic genre with its highly stylized and conventional rhetoric, as Clover demonstrates (1980:460-468). Excerpts from the extended encounter between Unferth and Beowulf demonstrate the subtlety of the insult-boast combination:

> Unferð maþelode, Ecglāfes bearn, / þē æt fōtum sæt frēan Scyldinga, / onband beadurūne … / 'Eart þū sē Bēowulf, sē þe wið Brecan wunne, / on sīdne sǣ ymb sund flite, / ðǣr git for wlence wada cunnedon / ond for dolgilpe on dēop wæter / aldrum nēþdon? … Bēot eal wið þē / sunu Bēanstānes sōðe gelǣste. / Ðonne wēne ic tō þē wyrsan geþingea, / ðēah þū heaðorǣsa gehwǣr dohte, / grimre gūðe, gif þū Grendles dearst / nihtlongne fyrst nēan bīdan.' / Bēowulf maþelode, bearn Ecgþēowes: / 'Hwæt, þū worn fela, wine mīn Unferð, / bēore druncen ymb Brecan sprǣce, / sægdest from his sīðe! Sōð ic talige, / þæt ic merestrengo māran āhte, / earfeþo on ȳþum, ðonne ǣnig ōþer man … Hwæþere mē gesǣlde, þæt ic mid sweorde ofslōh / niceras nigene. Nō ic on niht gefrægn / under heofones hwealf heardran feohtan, / nē on ēgstrēamum earmran mannon; / hwæþere ic fāra feng fēore gedīgde / sīþes wērig … Nō ic wiht fram þē / swylcra searonīða secgan hȳrde, / billa brōgan. Breca nǣfre gīt / æt heaðolāce, nē gehwæþer incer, / swā dēorlīce dǣd gefremede / fāgum sweordum -- nō ic þæs [fela] gyple --, / þēah ðū þīnum brōðrum tō banan wurde, / hēafodmǣgum; … Secge ic þē tō sōðe, sunu Ecglāfes, / þæt nǣfre Gre[n]del swā fela gryra gefremede, / atol ǣglǣca ealdre þīnum, / hȳnðo on Heorote, gif þīn hige wǣre, / sefa swā searogrim, swā þū self talast; / ac hē hafað onfunden, þæt hē þā fǣhðe ne þearf, / atole ecgþræce ēower lēode / swīðe onsittan, Sige-Scyldinga; … Ac ic him Gēata sceal / eafoð ond ellen ungeāra nū, / gūþe gebēodan' (Klaeber 19-23).
>
> [Unferth spoke, son of Ecglaf, who sat at the feet of the king of the Scyldings, unbound words of contention … 'Are you that Beowulf who contended with Breca, competed in swimming on the broad sea, where for pride you explored the water, and for foolish boast ventured your lives in the deep? … All his boast against you the son of Beanstan carried out in deed. Therefore I expect the worse results for you -- though you have prevailed everywhere in battles, in grim war -- if you dare wait near Grendel a night-long space.' Beowulf spoke, the son of Ecgtheow: 'Well, my friend Unferth, drunk with beer you have spoken a great many things about Breca -- told about his adventures. I maintain the truth that I had more strength in the sea, hardship on the waves, than any other man

> **... it befell me that I slew with my sword nine sea-monsters. I have not heard tell of a harder fight by night under heaven's arch, nor of a man more hard-pressed in the sea-streams. Yet I came out of the enemies' grasp alive, weary of my adventure ... I have not heard say of you any such hard matching of might, such sword terror. Breca never yet in the games of war --neither he nor you -- achieved so bold a deed with bright swords (I do not much boast of it), though you became your brothers' slayer, your close kin ... I tell you truly, son of Ecglaf, that Grendel, awful monster, would never have performed so many terrible deeds against your chief, humiliation in Heorot, if your spirit, your heart, were so fierce in fight as you claim. But he has noticed that he need not much fear the hostility, not much dread the terrible sword-storm of your people, the Victory-Scyldings ... But I shall show him soon now the strength and courage of the Geats, their warfare (translation by Donaldson 1966:9-11).**

Although we know the speech genre from literary accounts, flyting is a real-life event possessing a context in the world of the early English (Bawcutt 1983:8). In Old English, the verb *flītan* has the meaning of 'strive' and 'dispute'; later in the Middle Ages the verb and a nominal form indicate 'noisy quarrels and arguments, often taking place in public' (Bawcutt 1983:7). In this latter sense its use continues into the Early Modern period. Civil and judicial records of sixteenth-century Scotland make frequent reference to flyting as a socially-disruptive behavior. The elaborate flyting portraits of Dunbar and Kennedy, Priscilla Bawcutt believes, resonate with the verisimilitude of a caricature or a political cartoon (1983:21).

Later medieval and sixteenth-century literary flyting (e.g. by Dunbar, Skelton, Montgomery), to sketch out modern developments, constitutes a sophisticated mix of oral and written traditions.[8] This hybrid, beyond the scope of the present investigation, represents a transformation of the oral genre. Renaissance poets composing flyting episodes adeptly invert the 'usual rhetorical prescriptions and expectations' of the time, David Lampe has shown (1978:106). The pseudo-Ciceronian *Rhetorica Ad Herennium*, a basic medieval handbook of rhetoric, provides a source for the witty subversions that emerge as rules of sixteenth-century flyting (Lampe 1978:105). Although, Lampe concedes, insult is by definition a face-to-face phenomenon and therefore an oral one, the orality of these episodes proves as much a superficial stylization as an intrinsic feature. The poems remain 'highly contrived and written form[s]' (Lampe 1978:107).

In contrast, the Old English representation of flyting contains 'language closer to prescribed ritual than literary oratory' (Nolan and Bloomfield 1980:499). The Anglo-Saxon event usually appears as part of a larger heroic contest. Flyting, as Parks establishes, is motivated by a two-fold purpose. In the foreground is an immediate desire to quarrel; this need is supported by a less immediate but nonetheless pressing desire to contract either peace or further engagement with an opponent (Parks 1990:99-100). The flyting itself operates in a tension between these two impulses. A flyting hero might, for example, intimidate or supplicate in order to avert violence and to resolve animosity (Parks 1990:100-102).

Like sounding, flyting is essentially a dialogic event. As such it is composed by the separate speech acts performed by two adversaries. A standard flyting sequence observes the form: claim, defense, and counterclaim (Clover 1980:452). We can begin to analyze the dialogue by concentrating on the individual speeches that are made. Clover's summary of the structure suffices: '[t]he format of the exchange is highly stylized and is characterized by logical and syntactic parallelism: questions and answers, counterposed speeches, recurrent phrases, and symmetrical reasoning' (1980:453). Rhetorically, the speech maker moves through five speech functions identified by Parks. When the speech is finished, the flyter having moved through the stages of identification, retrojection, projection, attribution-evaluation, and comparison, the opponent responds. A series of flyting speeches is thus generated, each speech linked by the pattern of initiation and response (Parks 1990:104;114). The winner of the resulting contest, in Clover's estimation, is recognized as the opponent who has managed to be most eloquent and to use 'superior evidence' against his foe (1980:452).

Flyting can be part of a larger engagement like warfare. By itself it can also constitute battle. The flyting hero adopts the attitude embodied in the character of Beowulf. The speaker's point of view, as Alain Renoir states, 'is perfectly simple; he has a job to do, and he will do it precisely as the Germanic tradition expects it to be done' (1963:243). Although heroic ethics stress the necessity of actions following words, the performative nature of the words themselves must be emphasized. '[I]t is as possible to act by saying words as by performing physical actions', Marie Nelson insists (1989:4). For the Anglo-Saxon, words and actions are inextricably tied; the Anglo-Saxon flyter actually does things with words. Power and status are negotiated on a verbal battlefield.

Performative flyting is often confused with a related Old English tradition of performative boasting called the *gilpcwide*. The *gilp* is a shouting, but one with a positive rather than negative social significance (Nolan and Bloomfield 1980:499). Its cognates connote, as Barbara Nolan and Morton Bloomfield show, an almost magical power of the shouted words to affect the world (1980:501). This incantory power provides the illocution with a sense of circumspection that distinguishes the uttering from mere braggadocio (Nolan and Bloomfield 1980:502). The second main constituent of the *gilpcwide* is the *bēot*. *Bēot* signifies a vow or promise for the speaker's future action. That action stems directly from the identity of the hero, moreover. Thus Nolan and Bloomfield describe the *bēot* as a 'means of responsible self-identification and self-command as a prelude to role-defining action' (1980:503). Although the *bēot* and the *gilp* overlap in meaning, each constitutes a complementary aspect of a larger speech event. The substance of the role-defining promise, the *bēot*, can be distinguished from the manner of its presentation in ritual declamation, the *gilp* (Nolan and Bloomfield 1980:504).

If we envision a continuum of Old English speech events, we can locate both *gilpcwide* and flyting in relation to each other and to other verbal acts. The two events overlap partially in the sense that both involve boasts of the speaker's prowess. Both may also contain vows of future action. In *gilpcwide* the action may be directed against a non-human opponent; in flyting we see this vow directed against the verbal adversary. Both speech events may also involve the ritualized insulting of the foe, although this abuse is more predominant and explicit in flyting. The latter might therefore align itself with a negative accusatory pole on a speech continuum while the former might be considered positive.

Let me expand the construct of the continuum briefly in order to shed light on the speech genre it maps. It is the combination and frequency of the individual speech acts constituting the speech events of *gilpcwide* and flyting that locate them on the continuum. The individual acts of the insult, the boast, and the vow retain separate integrity even while the independent appearance of each is obscured as it combines with others within the larger event. In other words, we observe an array of acts which cluster as types of verbal competitions on a speech continuum.

Let me now increase the magnification, so to speak, and focus on that section of continuum in which verbal dueling occurs. The continuum of contestive speech events seems to possess a diachronic as well as a synchronic integrity. Elaboration of the continuum will ultimately allow me to isolate an agonistic insult at the center of the Old English and Present-Day English events. With this figure in mind we can engage in a cross-temporal, cross-cultural comparison. Parks (1990) pursues such a comparison between flyting and sounding, showing that both dialogic events can be considered varieties of a common genre, the verbal contest. By adopting a pragmatic framework through which he delineates four variables of the so-called 'world-to-dialogue' relationship, Parks reveals the commonalities between flyting and sounding. A discussion of their roles in the generic event renders the points of the continuum more distinct.

Four features are present in the genre: subject matter, referential mode, locus of resolution, and context. His discourse analysis uncovers the function of each. The first element is apparent from the preceding review of each event. Parks describes sounding as 'insult through metonymy': the sounding adversary 'partakes' of the abuse directed at the specified target through his links with the target (1990:174). The subject matter of flyting is equally contestant-oriented while the honor of the adversary's family is similarly questioned. Parks attributes the same deep structure in the ritual insults found in sounding (i.e. a clause of attribution) with the ritual insults found in flyting. This underlying structure, as Labov (1972) shows, is usually deleted in performance but recovered by the opponent who understands that the insult is attributed to his character. Thus, Parks elucidates, the proposition 'Brecca defeated you at swimming' can be interpreted as 'You are so lacking in heroic prowess that Brecca defeated you in swimming' (1990:111-112).

Whereas their subject matter is the same, the referential modes of sounding and flyting may differ. As we have seen, sounding is rooted in game. It is essentially ludic in its mode of reference. Parks is careful here to distinguish linguistic mode from content, for sounding can have serious implications. A ludic speech activity, on the other hand, is 'fictionalized, in the sense that the normal connections between statements and the world of reference have been severed' (Parks 1990:167). For this reason, denials are inappropriate responses to ritual insult.

Yet recall that sounding play incorporates a range of speech events. As stated earlier, Labov (1972) identifies a more serious personal insult contest found alongside the ritual tradition. This non-fictionalized tradition may in fact be closer than ritual sounding to the Anglo-Saxon practice of flyting. Clover (1980) argues that the flyting insults are not ritual in the sense Labov intends, but are real. Not only plausible, their propositions sometimes reflect documentable facts about their target (Clover 1980:458). The relationship between words and the world in flyting is serious. In such non-fictionalized contests of personal insult, Parks shows, the person insulted usually 'feels obligated to defend himself by denying' the accusation, therefore (1990:169). Physical defense may follow if verbal assault fails. Assessment of referential mode must be qualified, then, to admit the overlap between these serious insult traditions.

Modes of reference logically lead to Parks's next feature, locus of resolution. By this latter phrase Parks means the location at which crucial contest occurs (1990:169). Because the verbal activity remains self contained, sounding is usually resolved internally. As seen earlier, when ritual abuse occurs, violence is unlikely. A similar evaluation of flyting depends on how the flyting episode is measured. Parks determines that in contrast with sounding, the verbal attack of flyting often leads to physical attack. The conflict is resolved in a means external to the speech event, in battle, for instance. Clover (1980) disagrees. Just as frequently, she objects, flyting is itself combat 'complete in itself', won and lost on its own terms (1980:459). In her view, actual physical combat begins a new episode independent from the flyting. Silence implying the defeat of one verbal adversary is an end as appropriate as violence (Clover 1980:464-465). Mapping these two events on the oral continuum helps reconcile these two interpretations. In terms of locus of resolution, flyting and sounding may overlap or look 'fuzzy' on a map of speech events.

The context of each event displays a similar commonality. The Anglo-Saxon warrior usually battles an opponent from outside his immediate community. Kinship laws generally forbid him otherwise. Thus the social context of flyting as prelude to battle, like the fight that follows, is usually external or intergroup (Parks 1990:173-174). Sounding always has the same potential to erupt into violence, but this potential is usually not realized when members of the same group engage in play with each other. The ingroup nature of ritual sounding probably also restricts its mode of reference, encouraging ludic activity (Parks 1990:175). Personal insult competitions, correspondingly, prove more serious when they are intergroup.

Mutually reinforcing features thus characterize each speech event and show points of similarity and departure between them. The common core that reveals itself can be distinguished from other contestive forms. Again, establishing a continuum allows us to visualize the relationship among forms of verbal dueling. Verbal confrontation, states Edith Folb, 'runs the gamut from the more or less playful capping sessions to the more serious encounters ... to hard-core confrontation' to an end point where verbal aggression breaks into violence (1980:95). Edwards and Sienkewicz present examples from the oral world they identify: '[a]t one end ... is the truth-based abuse of the Galician singer and at the other is the playful exaggeration of the player of the dozens' (1990:131).

Not only are sounding and flyting in close proximity to each other with regard to other forms of verbal dueling, they overlap when plotted on the continuum. Where flyting and sounding intersect on the continuum we can isolate an agonistic insult event. The speech act of the insult lies at its center. As the insult exchange develops into a competitive performance a larger event occurs. The agonistic event, more generally, can be seen as the intersection of a number of closely related individual speech acts. The bundle of acts has an intrinsic cohesion beyond its historical association. As Edwards and Sienkewicz observe,

> [w]hile praise, blame, boasts, self-deprecation and ritual abuse may at first appear to be very different phenomena, in practice the dividing line between categories can be a very hazy one ... The step from praise of self to derision of another is a small one. Thus, any discussion of these oral events will move almost imperceptibly from praise to blame to boasting to invective (1990:82).

The influence of each of these acts can be obscured as it participates within a larger speech event. Nonetheless it is the presence of this handful of related acts which distinguishes a common English form of verbal dueling.

Let me summarize my argument so far. Sounding and flyting seem like very different events. Each differs from the other in its formal requirements and cultural context. Nevertheless as forms of verbal dueling, sounding and flyting have much in common. A mathematical model helps us envision how complementary speech acts at the core of each combine. Insults and boasts 'in varying proportions' conflate in Old English flyting tradition. The larger event can be seen as a kind of fuzzy set. Within it, overlapping illocutionary realms create a pragmatic entity characterized by an agonistic mode of performance. When a parallel oral tradition appears during the modern period, the fuzzy set associated with sounding takes a slightly different shape because boasts do not occur with the same frequency there as they do in flyting events. The nuclear core of each remains the insult, nonetheless, and it retains the tendency to attract boasting acts to its performance. Again and again the insult contests spread outward on a pragmatic continuum and overlap with boast-vow or boast-brag competitions in performance of verbal dueling. A field of overlapping speech acts thus extends across time. As the situation is viewed from a diachronic perspective, a pattern emerges.

It is no accident that the genre of verbal dueling -- despite its realizations in unique cultures -- continues to manifest itself in an English pragmatic form. Acts of verbal dueling seem necessary to human society and culture. All the acts noted above are categorized by Edwards and Sienkewicz as acts of oral referring, the act of referring to and thereby involving a person from the community in the performance. 'Social equilibrium' and community are maintained even while an individual is set apart by attention to his or her behavior. Such acts play an important social role in an oral culture by delineating and sanctioning a communally acceptable code of behavior (Edwards and Sienkewicz 1990:81-82;112-133).

While serving an important social function, the verbal competition at the core of sounding and flyting may play an even more fundamental role for human beings. Walter Ong explains that in terms of human cognition, 'the roots of verbal combat ... [seem] temporally antecedent to the emergence of consciousness' itself (1981:27). Because the storage and retrieval of information depend on fundamental oral processes, then, oral modes prove similar across a variety of cultures. They are also inherently agonistic, Ong asserts. In public life especially, oral processes tend to be 'formulaic in design' and 'agonistic in operation' (Ong 1981:123).

Oral cultures require virtuosity in order to maintain the power of formulaic thought itself: contestive performance is therefore fostered to reinforce the formula's permanence or reality (Ong 1981:124-125). The struggle or adversativeness at the heart of contest is not at all the same thing as aggression or hostility, Ong notes. While these attitudes may be present at a contest, neither constitutes the contest (see Ong 1981:15). Adversativeness is, in a more neutral sense, oppositional. Ong offers the analogy of gravity, an oppositional force that allows people to exist on the planet. Individual identities are structured in opposition to the 'not me', he also points out (1981:15). Similarly, oral expressions can be realized and transmitted only through the tension of agonistic performance.

Thus there is an intimate connection between the agonistic and orality (Ong 1981:124-125). This very nexus of agonistic orality connects signifying behavior (of which sounding is a sub-category) and flyting, Ong contends (1981:125). Both flyting and sounding prove independent reflexes of something that may well be a linguistic universal. In other words, on some profoundly basic level both acts are motivated by residuals of the agonistic which serves as a vehicle for oral culture. The independent cultural events of flyting and sounding can be viewed as parallel manifestations of primal agonistic orality.

Let me switch perspectives at this point and focus on the language that conveys this recurring speech genre. As different speakers use the language they contribute to its form. African Americans, as all speakers of English, appropriate the language for their own use and purpose: 'the Afro-American emphasis on orality and belief in the power of the ... [word] has produced a style and idiom totally unlike that of whites, while paradoxically employing White English words' (Smitherman 1977:58;79). In a certain sense, the exchange proves reciprocal. The abstract deep structure we call the English language (Smitherman 1977:193) receives an infusion of agonistic orality from its Black English dialect. Whereas an oral tradition transported from a Indo-European linguistic homeland motivates the Old English event, another oral tradition brought from an African one motivates the Black English event. The history that emerges, finally, is of a language infused with oral traditions from two different cultures at two different periods in its development.

The history of the English agonistic insult derives from this cultural infusion. Cognate oralities alternately animate an English speech event. The life of the genre may be interrupted or intermittent, but an English genre exists nevertheless. In asserting the existence of an English genre, however, we must guard against cultural appropriation. We cannot deny the heritage of which either event is an inextricable part. Not every English speaker can participate in an event called sounding. We can no more remove that event from its African-American cultural grounding than we can remove flyting from its Germanic context. As a speech event the agonistic insult possesses cultural restrictions on its enactment. Its immediate pragmatic requirements vary over time according to the cultural determinants present for its speakers.

The life of the genre holds significance beyond the revelation of variable pragmatics, however. In the end, this pragmatic history tells a larger story of cultural change and the renewal of a language's illocutionary resources. As cognate oralities use dialects of English in their performance they contribute to the language an important tradition. With the disjunctive recurrence of the agonistic insult, English manifests an agonistic orality central to its own existence as language. Albeit transitory, agonistic orality remains a tenacious catalyst of pragmatic evolution.[9]

## NOTES

1. See Edwards and Sienkewicz (1990:218-219) on the desirability of using insider-studies to approach a culture different from one's own; used properly such studies can help guard against acts of cultural imperialism.

2. Kochman details the theoretical framework for ethnography of communication in 'The Ethnic Component in Black Language and Culture' in Phinney and Rotheram (1987).

3. Edwards and Sienkewicz advise against seeing the opposition of orality and literacy as a dichotomy; rather, degrees of each function along an oral-literate continuum (1990:6-11). Transitional periods and mixed communities evidence the reality of this concept. See, for example, Mary Carruthers (1990) for a study of orality and memory in the post-literate culture of the European Middle Ages.

4. The term 'signifying' can also be used to refer to a particular way of speaking. Abrahams summarizes the terminological confusion that has grown up around the use of 'signifying' and 'sounding' (1976:50-51). A variety of labels for the same activity compete in different regions of the African-American speech community. Linguists, moreover, have generalized terms whose use originally may have been inconsistent within a particular area. Abrahams cautions, however, against allowing terminological profusion to get in the way of trying to understand the behavior (1976:49-51). Kochman sidesteps the confusion altogether and simply calls the phenomenon by the descriptor, 'verbal duelling' (1987:233).

5. The extent to which the dozens is also a white behavior has long been debated in the literature. See, for example, Berdie 1947, Elton 1950, and Labov 1972.

6. Other theories complement this one. Kochman, for example, focuses on African-American verbal behaviors as coping mechanisms within a 'high stimulus culture' (1987:231ff.). Cf. Edwards and Sienkewicz for explanations of pervasive obscenity in traditions of ritual abuse (1990:120-123).

7. The genre becomes so conventional, Clover argues, that the practice of flyting is distorted for comic effect in at least one Norse poem; the poet of the Eddic *Hárbarðsljóð* commits 'generic heresy' in order to entertain an audience (1979:132). Clover deduces the likelihood that if this act of 'sabotage' occurs as a purposeful literary device, the audience must have known well and appreciated the conventions of flyting (1979:139-140). Similarly Anderson argues that irony functions as sophisticated convention in the flyting in *The Battle of Maldon* (1970:199).

8. Hughes suggests that tenacious Norse influence in the northern part of Britain cultivates Scots literary flyting (1991:49).

9. I am indebted to a number of colleagues for their assistance with this research. John Rickford was most generous in acquainting me with scholarship on sounding and African-American oral traditions. Stephen Partridge discussed Old Norse flyting episodes with me and passed along relevant citations. Linda Simpkins offered perspective on flyting.

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# AN OVERLOOKED ETHOLOGICAL DATUM BEARING ON THE EVOLUTION OF HUMAN LANGUAGE

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Linguists speculating on the origins and evolution of language seem to have confined their trans-specific considerations to the communication systems of other animals. This limitation has resulted in the overlooking of some significant evidence bearing on the evolution of language.[1]

Language was once defined as "the totality of utterances that can be made in a speech-community" (Bloomfield 1926 [1966]: 26; compare "a set of sentences," Chomsky 1957: 13). If that were an adequate definition, obviously no person could learn a language, since the totality of utterances of any language is infinite in number. Definitions of language have also been attempted via a list of unique properties that, taken together, characterize human language as against animal communication systems; such lists are unsatisfying because they seem never to be definitive (as it were), and are constantly being expanded.[2] Moreover, they typically run into the problem of modality: since it is agreed that (native) sign languages of the deaf are to be recognized as human languages on a par with spoken language, the intuitively obvious design feature concerning the vocal–auditory channel must be abandoned.

A more reasonable definition of language would involve the uniquely and universally human ability to learn, internalize, and master a grammar (where the mathematically oriented might consider a grammar a set of "rules" for "generating" "sentences"; this attitude does no harm so long as it is recognized that this notion of grammar can be no more than a metaphor for what minds in brains do—for what has evolved from a preexisting animal capacity). This means that the Language Acquisition Device[3] must win the attention of evolutionists, rather than language itself.

So far, speech has been alluded to only dismissively. It is clear that the vocal–auditory channel of language is, as it were, a historical accident. Granted that an evolutionarily useful language ought to be able to operate at a distance rather than require direct contact between communicating parties, only some of the sensory systems available to communicating animals constituted appropriate modalities: visual, auditory, and olfactory (sight, sound, and smell); tactile and gustatory (touch and taste) are ruled out because they require immediate proximity of the parties. It is, though, historical accident that the auditory channel became the primary one for linguistic communication: it can easily be imagined that a visual channel could have developed, or, it can somewhat less easily be imagined, an olfactory channel. If the visual channel had become favored for communication, it need not have operated on gesture only, as is suggested by contemporary sign languages. It can easily be supposed that a means of modulating the appearance (color, patterning) of patches of skin might have developed. An argument against a visual channel is that sight must operate on—well, a line of sight, whereas sound waves can be perpetuated through a considerably convoluted volume. An olfactory channel would be limited to a close range, or by probable lack of subtlety: a scent that is perceptible at a great distance must take quite a while to dissipate, and would obscure immediately successive scents. So of the existing senses, the sense of hearing seems best suited to receive a signal as complex as that required by a human language.

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[1] This presentation has benefited from the comments of S. T. Emlen and C. F. Hockett.

[2] Hockett (1958: 574) gave 7, Hockett (1960) gave 13, and Hockett (1966) gave 16; Hockett and Altmann (1968) is to be taken as definitive. Lately (pers. comm.) Hockett adds PREDICATION as a design feature, as does Bickerton (1990: 48) independently.

[3] So called by Chomsky (1965: 32); he, of course, was not the first to recognize the significance of what the infant does.

However, it is not beyond evolutionary possibility that organs sensitive to environmental stimuli that are overlooked by modern humans might have evolved instead—the whole range of the electromagnetic spectrum beyond visible light, from infra-red (heat) through radio emissions and beyond in both directions would seem to be available. We know of many animals that "see" infrared and ultraviolet. The electric eels, at least, have developed biological means of emitting electricity. The emanations recorded by electroencephalographs may be incidental to the functioning of mammalian neurons, but the "firing" of them is not—it seems quite accidental that apparently no species has yet managed to communicate telepathically.

Furthermore, it is also historical accident that in humans the respiratory system became the anatomical base for the vocal tract: earthly bodies provide many other means of making noises, any of which could have become specialized for communication: a percussive finger or other organ, an anus modulating a supply of wind, or reuse of any other part of the body (evolution operates on anything that happens to be available, however unlikely, and indeed can only do so). The elephant both grasps and makes noises with its nose.

When the evolutionist's approach to the origin of language thereupon gives up concentrating on language itself and the familiar modalities thereof, it becomes possible to consider a phenomenon discovered in a series of elegant experiments that were described in the popular press nearly twenty years ago[4]—a phenomenon that seems to have been completely overlooked by linguists who write on the origin of language. Stephen T. Emlen believed that he was investigating "one cue system that appears to be of major importance to night-migrating birds: orientation by the stars" (1975: 103). In fact, he was investigating the acquisition of information by young indigo buntings (*Passerina cyanea*) in a way remarkably parallel to the acquisition of language by young human children.

First, Emlen determined that indigo buntings (like many migratory birds) navigate by observing the pattern of stars in the night sky—specifically, stars within about 35° on the celestial sphere of the North Star. By studying birds in a planetarium, where stars could be projected in any orientation with respect to true north, he showed that it is the stars alone that the birds follow, and not, as in some species, grains of magnetic iron found in the brain (Anderson 1983: 59). (Nor do they rely on an internal calendar.) The buntings, who summer in the eastern United States and winter in the Greater Antilles and Mesoamerica, need to fly north in the spring and south in the autumn. Emlen artificially induced spring and fall plumage and fat-storage phenomena in some individuals, deceiving the birds into migratory behavior, and found that the birds whose bodies knew it was spring headed north, and those whose bodies knew it was autumn headed south—under the same spring sky display (and whether the display was slowly rotating, as in nature, or stationary).

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[4] Emlen 1975 was the August cover story in *Scientific American*. Aspects of Emlen's work had been presented to ornithologists (1967a, 1967b, 1969b, 1972) and general scientists (1969a, 1970).

Second, Emlen wanted to know whether birds' ability to navigate is learned or innate—do they "possess a genetically inherited 'star map'" (p. 109)? It was already known that adult migratory birds are better at navigating than young birds making their first round trip, suggesting that navigation is learned. Emlen demonstrated that the star patterns used by indigo buntings are learned and not innate: he took birds from their nests at the age of 4–10 days and reared them in diffuse lighting (in the absence of any point sources of light); when they were physically ready to migrate, they were completely unable to orient in the planetarium. Another group of nestlings, similarly reared, were regularly shown the true night sky (in the planetarium) and oriented properly.

But was exposure to the stars merely a trigger of some innate property of indigo buntings—is orientation to Polaris built into the brains of the chicks, so that, when they first see stars, they "know" or "realize" that the stars are significant to them? Emlen's third experiment brilliantly demonstrates that this is not the case, and that indigo bunting chicks learn star patterns exactly as human infants learn language. Emlen caused the stars in the planetarium to rotate nightly not around Polaris, as in the real world and the previous experiment, but around Betelgeuse, a very bright star in the constellation Orion almost as far away from Polaris as possible.[5] The buntings who were regularly exposed to this artificial sky indeed learned that Betelgeuse was the Pole Star, and when they were ready to migrate southward and were brought into a normal planetarium, in fact they oriented themselves 180° away from Betelgeuse: what they understood as south.

Fourth, could the Polaris pattern replace the Betelgeuse pattern in later life? Emlen gave the group of Betegeuse-trained birds a winter of simulated southern latitude, then a summer and autumn of exposure to the natural northern sky. In November, when they were physiologically ready to migrate, they were taken to the planetarium to view a sky in which Betelgeuse and Polaris appeared at similar altitudes in different directions. And they oriented toward a south relative to Betelgeuse, not to Polaris. So once they had learned Betelgeuse as north, it was indelibly part of their mental equipment.

Emlen apparently did not try an experiment in which young birds were exposed to a night sky that did not rotate at all. It seems likely that such birds would not develop navigation ability, being deprived of the specific pattern their brain is equipped to discover.

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[5] Its declination is +7°24' (= north latitude), placing it nearly on the horizon when Polaris is overhead.

The similarities between the birds' Orientation Acquisition Device and the babies' Language Acquisition Device are as follows. (1) The acquisition process only takes place early in life. (2) A particular complicated pattern (the center of rotation of the sky, a grammar) is learned without conscious effort. (3) The pattern learned depends on the input received (rotation around Polaris or Betelgeuse, utterances of English or Abkhaz). (4) A new pattern (rotation around Polaris, a second language) cannot be learned (or learned perfectly, for language) after the first pattern (rotation around Betelgeuse, the mother tongue) has become established.

Emlen does not recognize the parallel between the OAD and the LAD. He does offer an explanation of why it might have evolved in birds (but this reads suspiciously like the stories developed by sociobiologists to explain the evolution of human behavior patterns): the precession of the Earth's axis. In 26,000 years, the axis of the Earth wobbles in a full circle, so that it just happens to point at Polaris in the current era; 13,000 years ago and hence, the Pole Star is Vega, not Polaris. But how could this datum affect the survival of individuals in any particular generation of indigo buntings?

There are two possible ways of accounting for the similarity between the OAD and the LAD. Either they arose separately, from different ancestral abilities, and were shaped by similar environmental factors in similar directions – analogy, like the bird's wing and the bat's wing, the octopus eye and the mammalian eye, or the panda's thumb and the primate's thumb. Or else the OAD and the LAD both developed from some primeval Pattern Acquisition Device found in some population ancestral to both buntings and people, both birds and mammals—homology. We will not know whether the similarity is analogy or homology until neuroanatomy and neurophysiology, in particular human neurophysiology, become far more developed than they are. In the meantime, animal behaviorists might search for PADs in all sorts of lower animals, and neurolinguists might look for parallels with other species' mental abilities outside those concerned with communication. Only by widening the net can a greater harvest be drawn in.

## Appendix

One neurophysiologist who writes for the general public, William H. Calvin, has published a captivating series of books expounding his view of human evolution (1983, 1986, 1990, 1991); *The river that flows uphill* is the best one to begin with. He espouses the little-regarded theory of the "aquatic ape" proposed by Alister C. Hardy, who unfortunately died before presenting it in detail (so that the principal source on it is Morgan 1982, cf. Calvin 1986: 288, 504). Calvin accounts for the mysterious enlargement of the hominid brain followable in the fossil record by supposing that early hominids hit upon the survival strategy of throwing missiles at their prey: rocks, spears, discuses—he supposes, even, that the multitude of "hand axes" recovered from Pleistocene sites were in fact deadly Frisbees that were meant to be flung into herds of ungulates, both incapacitating and toppling dinner (1991: chap. 8). Calvin describes the large amount of computing power needed in the calculations that lie behind an accurate throw, which chimpanzees are not able to accomplish. He sees the impetus for cerebral development in the developing ability of hominids to throw strikes—either straight in over the plate, or lobbed gracefully but just as accurately high in the air. Throwing is a skill involving numerous finely tuned and finely timed activities in a sequence, a serial order. Calvin sees the other uniquely human mental abilities as bootstrapped on throwing ability. One of these, unfortunately, is language.

Calvin is convinced that language is a serial production. As linguists are immediately aware, this is not so;[6] but Calvin has fixed on the sequential movements of the vocal organs (e.g., 1991: 206), rather than on the mental processing that lies behind the final sequence of articulatory events (we can take simultaneous articulatory activity as a special case of sequencing, where the time between events happens to be 0 msec). He neglects reference, anaphora, movement, and all the other familiar phenomena of language that make a serial neural model inadequate for it (e.g., 1986: 353–58, 1990: 286–91). And the notes to passages of his books speculating on language, unlike those to most other topics, are remarkably devoid of references to the professional literature outside neurolinguistics (1983: ch. 15, 1986: day 10 mile 155, 1990: ch. 13, 1991: ch. 9).

A proper understanding of the nature of language would likely lead to great insight from this scientist who is willing to speculate in unusual directions. But this will not come about until the most basic findings of linguistics, even the very existence of the discipline, come to the attention of the general public.

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[6] Bickerton (1990: 60) points this out, and refers specifically to a parallel with toolmaking (139), but does not mention Calvin.

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# Τέμενος: AN ETYMOLOGICAL STUDY

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## 1. INTRODUCTION

The earliest attestations of the Greek word *τέμενος* are found in the Pylos tablets (152=Er 01 [312]). Herein, the Mycenaean term refers to two types of land-holdings. First, it names, both the private land-holding of a king (*wanax)*, and that of a military leader (lāwāgetās). Second, it names a sacred precinct dedicated to a god (Palmer 1963:99).

Similarly, in the later Homeric poems, the term *τέμενος* designates the altar and or grove dedicated to a god. In these four occurrences, one *τέμενος* is dedicated to Demeter (*Iliad* II, 695f), a second to Zeus (*Iliad* VIII, 47), a third to Sperchios (*Iliad* XXIII, 148), and a fourth to Aphrodites (*Odyssey* VIII, 363). The Homeric term τέμενος was likewise also used to indicate the landed possession of kings or military leaders. Such are, for example, the passages referring to the estate or *τέμενος* belonging to Alkinoös, king of the Phaiakians (*Odyssey* VI, 293); to the estate or *τέμενος* of Odysseus (*Odyssey* XI, 185; *Odyssey* XVII, 299); and to the estate or *τέμενος* belonging to the basileus portrayed on the shield of Achilleus (Iliad XVIII, 550)[1]. In addition, the Homeric term *τέμενος* also designated a possession to which a distinguished military leader might aspire through the performance of heroic deeds. Such are the spoils of victory assigned to Bellerophon (*Iliad* VI, 191-5), Meleagros (*Iliad* IX, 577-80), and Sarpedon (*Iliad* XII, 313-14f)[2].

Because Homeric contextual information seems insufficient for a confident interpretation of the term[3] and because, in addition, the term itself, presents some difficulties in its morphological make up, some scholars have cast doubt on whether Greek *τέμενος* is a term of Indo-European origin. In fact, these scholars prefer, instead, to connect Greek *τέμενος* to Akkadian *temmenu* (Sumerian *temen*) 'sacral foundation of a temple' (Manessy-Guitton 1966:14-33). Their preference is based on the perceived morphological and semantic similarity of the Greek and Sumerian terms, and by the notion that, though there may have been an Indo-European root **tem-* 'cut', there was not, however, in the proto-language, a suffix **-(e)-nos*[4].

This paper then, proposes that through the application of historical-comparative methodology, it is possible to explicate both the morphology and the meaning of the Greek term *τέμενος*. Moreover, a proper philological analysis will prove that the word's linguistic affiliation is clearly Proto-Indo-European in origin.

## 2. ON THE INDO-EUROPEAN STEM **τέμ-ϵ-*

As a case in point, Indo-European scholarship derives Greek τέμενος from a Proto-Indo-European form **tem-H-no-s*, and thus links the term to the PIE root **tem-* `to cut', (Walde-Pokorny 1959:1062-65). Scholars cite as evidence both Greek cognates (i.e., τέμει, τόμος, τομή), as well as cognates found in related branches of Indo-European. Such are, among others, Old Irish *tamnaid* `cut', Old Russian *tĭnù, tjoti* `strike', and Lithuanian *tìnti* `sharpen by hammering'. Among Indo-Europeanists, however, the morphology of the stem has caused some debates.

To account for the thematic e-grade stem, Indo-Europeanists have posited, as the basis for the Greek neuter noun τέμενος, a thematic verbal stem *τέμ-ε- to which a secondary suffix -*νο-(ς) is affixed. Such reconstruction, in their view, might be supported by the existence of an attested present τεμω, inferred from the attested 3rd. singular present τέμει (*Iliad* 13.707). However, Chantraine (1942:309) has suggested that the form *τέμει*, in the passage in question, may not mean `cuts', but `reaches, achieves'[5] and is therefore the third present singular of the verb *τέμω* `to reach, achieve'. There are, also, two other forms that could be cited in support of an *-E-* laryngeal extension on a full e-grade root. The first is the Ionic future τεμέω< *tem-E-s-. But, Beekes (1969:222) suggests that this could be a later formation on a thematic aorist, Ionic ἔτεμον. The other evidence that could be adduced in support of an e-grade of the root, is the attested infinitive τέμνεῖν (*Odyssey* III, 175). But again, this could be a later passage.

Lacking uncontestable evidence for positing an e-grade thematic root, a zero-grade aorist for the stem *ταμ-ε- has also been proposed as the bases of the neuter noun τέμενος. Indeed, there are several attested verbal forms to support this solution: the indicative τάμνω, the subjunctive τάμε, the optative τάμοι, the participle ταμῶν, and finally the infinitives ταμέσθαι, and ταμέειν (Cunliffe 1963:372). These attested forms, then, seem to support the inference that, initially at least, the productive stem of the verb was that of the thematic aorist *ταμω-. Hence, the present indicative τέμνω found in the Odyssey (*Odyssey* III, 175) "pushed us to cut the sea in the middle.", must have been an Attic innovation on a zero-grade root (Schwyzer

1939:693-[2]). In fact, because the attested forms τάμνω/τέμνω suggest a nasal present: **tm-n-eE-mi*, scholars infer that the nasalized forms can be explained as the thematized form of an ancient present in -νᾰ- (Cardona 1960:502-4)[6].

Attempts have also been made to explain the e-stem in a different way. One such solution proposes to derive the stem *τέμ-ε- from a stem *ταμ-ε- through the process of regressive assimilation; or else, to posit an archaic *τέμ-α-νος from which to recover τέμ-ε-νος on the pattern of Ionic μέγαδοσ: Attic μέγεδοσ (Schwyzer 1934-54: 255-6, 362; Kurylowicz 1956: 208 n.56), though the former is nowhere attested[7].

## 3. ON THE INDO-EUROPEAN SUFFIX **-(e)-no-*

Whatever the discussions on the color of the laryngeal preferred in the reconstruction of the stem, there is no doubt for these scholars that the root conforms to an Indo-European canonic shape. Indeed, they do not hesitate to posit for the proto-language a stem **tem-E-* as the basis of the Greek neuter noun τέμ-ε-νος. Nor is there any doubt at all, for that matter, on the Indo-European origin of the suffix.

According to Brugmann (1972 vol. II:139) the suffix **-(e)no-* was "characterized by its fertility" in the proto-language and it is found extensively in several daughter languages, particularly, as a participial and an infinitive suffix. As a case in point, the **-(e)no-* suffix could form verbal adjectives, which like those in **-to-*, when attached to a verbal stem had primarily passive meaning. The **-(e)no-* suffix could also create verbal substantives "many of which can be shown to have existed in the proethnic language" (1972 vol. II:140). In fact, there is a lengthy list proffered by Brugmann of nouns and adjectives that were formed exactly in this manner, not only in Greek, but in Latin, Indic, Slavic, Germanic, and so on (1972 vol. II:138-155). Brugmann further states that the ablaut of the suffix gives both a full grade form **-eno-* and a reduced grade form **-no-*. When used as participial adjectives, such suffix featured the weak grade of the root syllable. On the other hand, when used as substantives, they featured the full grade, i.e., **sup-no-/*suep-no-/*suop-no-* (Brugmann 1972 vol. II:140)[8].

The fact that the suffix created forms that were passive in meaning is relevant to the explanation of the semantics of the term, for Greek *τέμ-ϵ-νος*, literally appears to mean "that which is cut". In other words it is the result of an action performed by an agent.

## 4. HOMOLOGICAL PARALLELS

The primary evidence for the meaning of Greek τέμενος is, of course, its referent: a 'precinct', that is, ‘a delimited area, a portion of land'. Such terminology presents many homological parallels. The process appears to develop in two stages. First, a verbal form with the meaning of ‘to cut' engenders, through metonymic nominalization, cognates designating either the agent or the result of the action. As an example, the PIE root **(s)ker-* Germanic **skeran-/*skar-* ‘cut' is represented in the Old English verb *scieran, sceran* ‘shear', which describes the action, while the noun *heoru* ‘sword' designates the agent, (see also Lithuanian *kirvis*, Latvian *cìrvis* ‘ax') . An additional cognate, the Old English noun *scearu, scaru* ‘portion, division, share', designates the result. Focusing, for our purposes, on the result of the action, a cursory survey reveals that, nouns which mean ‘a cut', with cognatic verbs having the meaning of ‘to cut', may undergo a further semantic shift. That is, from their subsequent use in a variety of contexts, these nouns may reach a secondary stage when they acquire the additional meaning of ‘a piece, a portion, a share' of whatever underwent the cutting procedure.

One such shift, is the transition from an earlier meaning of ‘a cut' to that of ‘a parcel of land'. Whether this shift implies a development toward connotative meaning from denotative meaning, or perhaps a shift from a more general to a more specific meaning, it is difficult to establish[9]. What can be easily ascertained, however, is that this development, frequently and typically occurs in words having an earlier meaning of ‘a cut'. Consequently, some Indo-European verbs which denote the process of ‘cutting, hacking, or splitting' also have cognatic nouns designating ‘a share or a portion of land, a field marked off'. Such is, for example, the PIE roots **kes-/*kas-*. Its instrumental suffixal form **kas-tro-*, which gives, in Sanskrit, the word *çastrá-* ‘sword, knife', has several cognates in Italic: the Latin verb *castrāre* ‘to cut', the neuter noun *castrum* ‘camp'-- originally, ‘a delimited, or cut-out area'-- and the Oscan-Umbrian noun *castruo* ‘field, allotment'[10].

The above homological parallels uphold the notion that the meaning ‘land cut and set aside, precinct' of the Greek term τέμ-ε-ν-ο-ς, could have been a logical semantic development from the meaning of ‘a cut, a share, or portion [of land]'. As for elucidating the later transition, that in which the meaning acquires the notion of sacredness, (from ‘precinct' to ‘sacred precinct)', one must only look for its pragmatic context. More specifically, it is well documented that, initially, Indo-Europeans worshipped in groves. These groves must have been ‘cut out' so to speak, and set aside for that purpose. As a matter of fact, the practice of delimiting an area is well documented within the Indo-European cultural tradition. It was employed to separate sacred from profane space (Della Volpe 1992:71-122). Thus, the transition from the meaning of a `lot' to that of a `sacred precinct' does not require complex reasoning or inferences. Furthermore, that the referent of Greek and Mycenaean *τέμ-ε-νος* is clearly a portion of land, part orchard and part arable land, is indisputable. The description is given in numerous passages (see note 1). In fact, the precinct could belong to a king or a military leader, as well as being dedicated to a god. There is no suggestion in Mycenaean, nor in Homer that *τέμ-ε-νος* is a temple, nor that it refers to the foundation of a temple.

On the other hand, Sumerian *temen*, which appears to have meant `precinct, foundation of a temple' has no morphological or semantic study, at least that I am aware of, which has attempted to explain its Sumerian origin. Scholars simply quote it in placenames of Sumerian egemony. Furthermore, in no gloss is there a reference to a field. Rather, its meaning `foundation of a temple, sacred precinct', appears to be very specific (Manessy-Guitton 1966:14-33). Thus, the similarity between the Sumerian and Greek terms appears to be coincidental.

## 5. CONCLUSION

The make up of the Greek term *τέμ-ε-νος* is fully explicable within Indo-European morphology and semantics. The etymon appears to derive from a PIE root **tem-* `cut', and be composed of a theme *τέμ-ε-* plus a *-νο-* suffix. Of course, τέμ-ε-ν-ο-ς could well be an *en*-stem which later passed over to the *o*-declension. But neither morphological reading invalidates the notion that the lexeme is of Indo-European origin. In fact, the term conforms to the grammatical rules of Indo-European and has cognates in several descendent languages.

Those who question this idea, preferring to link the term τέμενος to Akkadian *temennu*, and thus classifying it as a borrowing from Sumerian into Greek (Manessy-Guitton 1966:14-33), do so mainly by casting doubt on the legitimacy of the suffix in the proto-language. They support their claim by pointing out that the individual languages have produced, each on their own, a **-no-* suffix. Thus, Greek, Sanskrit, and Latin, languages in which the **-no-* suffixes appear, must have independently innovated (Manessy-Guitton 1966). Such a solution is not only refuted by the evidence (Brugmann 1972 vol. II:138-155), but goes against the basic principle of historical comparative linguistics which holds that if two or more languages share the same innovation, the solution generally lies in postulating a common innovation at a prior stage.

## Notes

1. Nausikaa in talking to Odysseus says:

> "...and there is my father's *temenos* and his flowering orchard,.." (*Odyssey* VI, 293).

Antikleia, Odysseus' mother, reassures him that no one took his estate, but that Telemachos administer it:

> "No one yet holds your fine estate, but in freedom Telemachos administers your τεμένεα..."(*Odyssey* XI, 184-85)

And again, Homer, in describing the return of Odysseus says:

> "...so that the servants
> of Odysseus could take it to his *temenos*,..."
> (*Odyssey* XVII, 298-99).

The description of Achilleus' shield reads as follows:

> "He made on it the *temenos* of a king..." (*Iliad* XVIII, 550).

2. Glaukos in response to Diomedes exhortation recounts the story of Bellerophon and how:

> "the men of Likya cut out a *temenos*, surpassing
> all others, fine ploughland and orchard for him to possess."(*Iliad* VI, 194-195).

Phoinix tells Achilleus how the Aitolian elders, in need of help, offered Meleagros a great gift:

> "wherever might lie the richest ground in lovely Kalydon
> there they told him to choose out a *temenos*, an entirely
> good one, of fifty acres, the half of it to be vineyard
> and the half of it unworked ploughland of the plain to be furrowed." (*Iliad* IX, 577-80).

Serpedon speaking to Glaukos says:

> "... we are appointed a great *temenos* by the banks of the Xanthos,
> good land, orchard and vineyard, and plough land for planting wheat... (*Iliad* XII, 313-14).

3. Although, on the one hand, the evidence from the Pylos tablets leaves no doubt that the Mycenean τέμενος was an exclusive private holding --albeit of a king or military leader-- on the other hand, it is not clear, in the Homeric poems, whether or not during the Dark Ages such was the case for the rest of Greece. That is, Homeric sources do not unequivocally reveal whether or not a τέμενος designated land which belonged exclusively to an individual, though high ranking, and was thus private property. In any case, what seems to be clear from the Homeric poems, is that a particular parcel of land --one

composed of half orchard and half arable land-- (*Iliad IX, 577-80)* could be awarded to a single individual to possess.

4. In fact, Manessy-Guitton (1966) states that the only other word in Greek with the *-enos-* suffix found in *tem-e-n-o-s, is ἄφενος*, which is also non Greek in origin (Manessy-Guitton 1966:14-33). In all other words of IE origin the *-n-* is clearly part of the stem (Manessy-Guitton 1966:22).

5. Translations vary on this point. Some scholars (Lattimore 1951:290) translate the passage:

> ..τεμει δε τε τελσον αρουη
> "..till the share *cuts* the edge of the ploughland"
> (*Iliad* XIII, 707).

6. Cardona, however, dismisses this explanation, observing that neither κάμνω nor τάμνω have left any traces in any of the Greek dialects of the verb in -νᾰ-, even though this type of formation is well attested in Greek. Moreover, unlike the other forms in -νᾰ-, which characteristically feature a sigmatic aorist, both χάμνω and τάμνω exhibit a present in -*n-, and a thematic aorist. Cardona, therefore, derives the present in *ne/-o from a root aorist. That is ***támnô*** was formed on the thematic aorist ***étamon < etm-E-om***. The e-grade of the Attic present ***témnō*** reflects the Attic full grade thematic aorist. So that the alternation between ***étamon and étemon*** would, in reality, preserve the ablaut variation of an original athematic root aorist, the third singular active of which was **(e)tema(t)* (Cardona 1960:502--4).

7. Yet, the root accent on the infinitive of Lithuanian *tìnti* suggests the presence of a suffix -A-. A PIE root *tem-A->*tme-A- could well have generated Greek **τμᾰ-* found in numerous derivatives. Beekes (1969:221), however, again objects to positing in the proto-language a stem *tem-A-, and states that derivatives, such as the archaic ταμεσιχρος and τεμαχος tend to suggest an e-colored laryngeal instead. Yet, the presence of a zero-grade root: Ionic and Doric έταμον along with that of an e-grade root: Attic έτεμον, could well be explained as the result of a paradigm split of the root ablaut of an athematic root aorists *é-tem-H-t/*é-tm-H-ent. The root **tem-A-* giving an infixed athematic present **tm-n-eA-ti/*tm-n-A-e-onti*, thematization could have occurred from the 3rd person plural form *τάνοντι to which **-m-* would be reinserted on the analogy of the aorist έτάμον as in the case of δάμνᾰμι. From this, one can easily derive a thematic aorist root to which the *-ne-s suffix was attached creating the nominative form which later passed to the *-o-* declension. As a case in point, infinitives

give a variety of derivative abstract nouns formed in this manner.

8. Of course, one may suggest that Greek τέμενος could well be an _-en_ stem which later passed on to the _*o-_ declension. But, even if we posit an _-en_ stem noun, this latter suffix was not unknown in the protolanguage and it was used to create _nomina agentis_, though admittedly, it became more productive after the languages separated (Brugmann 1972 vol. II:340-356).

9. Or else the additional meaning is acquired through ellipsis (i.e., in British English, the word _furrough_ designates not only the _sulcus_, but a _field_, that is "an area delimited by a furrough".

10. Or even PIE _*kel-_ `to cut, strike' which gives from a suffixed form _*kl-eH-ro-_ Greek _klēros_ `lot, portion'.

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# LECTIO DIFFICILIOR

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The Hebrew text of the books of Samuel has long been known for the difficulties it presents. The fragments of these books found among the Dead Sea scrolls throw considerable light on the matter, but even where we have these as evidence many questions remain. This discussion deals with a few of the numerous textual cruces. In considering them I call attention to two ways of looking at textual variants: 1) the principle known as lectio difficilior 2) the Buddhist Hybrid Sanskrit tradition.

The principle lectio difficilior holds that the more difficult reading is probably the right, or earlier, one. A scribe is more apt to 'correct' something by using more readily understood terminology than to substitute something more difficult than the text as it lies before him. I quote Francis Bacon:

> 'For these critics have often presumed that that which they understand not is false set down: as the Priest that where he found it written of St. Paul, *Demissus est per sportam*, [he was let down in a basket,] mended his book, and made it *Demissus est per portam*, [he was let out by the gate;] because sporta was a hard word, and out of his reading.' (Postgate 1910.736)

This concept was later adopted by Biblical textual critics. Wetstein has a list of observations on variant readings. Number 8 states that a less usual locution is to be preferred to one found more often (1730:184). Bengel puts it succinctly in his 1734 Tubingen edition of the Greek New Testament: '*proclivi scriptioni praestat ardua* the difficult reading is to be preferred to that which is easy...' (from Postgate 1910.736). In time this was referred to as lectio difficilior or durior lectio ('the harder reading'). The textual critics Westcott and Hort remarked: 'readings originating with scribes must always at the time have combined the appearance of improvement with the absence of its reality' (1882.27). The inherently probable nature of the principle makes it a valuable guide in examining the text. It is not a fixed rule but rather a cautionary

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admonition to take textual problems seriously. No principle should be applied uncritically, and this is no exception (see, e.g., Scrivener 1894.2.247, Tov 1982.439).

The other piece of background which offers us a useful framework is Franklin Edgerton's Buddhist Hybrid Sanskrit. He observed that a number of Buddhist texts apparently written in Sanskrit contained inexplicable Middle Indic forms, some manuscripts having more than others. As most Buddhist texts were composed in a Middle Indic language, he postulated that these, too, had originally been in a Middle Indic dialect strongly influenced both by other Middle Indic dialects and by Sanskrit. Copyists gradually Sanskritized such a text until, in some cases, only a few forms had escaped their prestigious zeal. Eventually, falling into the hands of European scholars, all forms were in some cases Sanskritized. The result was a Sanskrit text with a typically Buddhist vocabulary. Seeking out the Middle Indic forms which survived this process, Edgerton has given us texts, a grammar and dictionary, reconstructing this early Middle Indic dialect (1953, see especially pp. 1-14 of the grammar). Emeneau, in a review of this work, rightly identifies the Middle Indic survivals in the texts as cases of lectio difficilior (1954.479).

There is frequent mention in the literature of the alternation of b with m in Hebrew, and the books of Samuel offer numerous examples (Driver 1890.lxviii). We here consider the prepositions b(ə)- and mē-/min. (To avoid using allomorphs potentially confusing to the uninitiated, b- and m- are employed as short for all forms of each, respectively.) The expected usage, from the point of view of the standard language, is b- 'in' and m- 'from', but b- also occurs in the sense of 'from' and m- in the sense of 'in' (Dahood 1967.427). In 2 Sam 22.9 (= Ps 18.9) we find both as 'from': 'There arose smoke from (b-) his nose and fire from (m-) his mouth devoured'. In Ps 18.14 we read 'he thundered from (b-) the heavens'. The same passage in 2 Sam 22.14 has m- for 'from'. Cross and Freedman recognize that the b- is original, changed to m- in 2 Samuel: 'we have an instance of editorial revision' (1975.146n35). They consider b- 'from' to be archaic, 'as in Ugaritic'. Egyptian m 'in, from' shows that we must have the source of m, i.e., **Nb, in the ancestral language, while Semitic attests to both proto **b- and **Nb. The base is **b-C 'foot, place' (Hodge 1991.656). Neither b- nor m- is archaic in Semitic, as both are inherited.

Another b- 'from' is found in 1 Sam 25.29: 'the life of your enemies he will hurl away from (b-) the hollow of a sling' (so the Tanakh translation). Others take this as 'in the hollow' (e.g., McCarter 1980.394), but surely

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something is hurled from a sling, not in it.

The use of b- 'from' is therefore a lectio difficilior and presumed to be original where found. As both b- and m- occur as 'from' in 2 Sam 22.9 (Ps 18.9), it is probable that the m- is a replacement of an earlier b-. Such variation is best explained as due to dialect differences, as Sarna suspected (1959.313). The substitution of m- for b- parallels the creeping Sanskritization of the Buddhist Hybrid Sanskrit tradition.

In addition to the use of b- as 'from', we find m- in the sense of 'in': 2 Sam 5.13 'and David took more concubines and wives in (m-) Jerusalem'. Driver notes instances where the Greek (LXX) has en 'in' for Heb. m-, including 1 Sam 9.2 'and there was no man among (m-, Gk. en) the sons of Israel'. There is a degree of ambiguity here, as m- here may also be translated 'from'. The Vulgate has 'et non erat vir de filiis Israhel' with de 'from, out of', and McCarter translates 'none of the Israelites' (1980.164). Another example is 2 Sam 18.3: 'a help to us in (m-) the city', where the Greek has en, the Latin in. Here also some translate m- as 'from'.

In 2 Sam 7.23 we find the phrase mippanē ᶜammekā translated 'before thy people'. This is emended by scholar after scholar, Driver saying that the 'from' sense is never lost in mippanē (1890.214n2; compare the reconstruction followed by Driver with that of McCarter 1984.232, 234). With m- as 'in' rather than 'from', emendation is unnecessary. Hebrew mippanē 'in front of' parallels Akkadian ina pāni 'in front of, before'. We translate, 'and to perform for you great and wonderful things for your land, in the presence of your people' etc.

A good example of m- 'in' from elsewhere in the Bible is in Job 7.15b: 'Death is in (m-) my bones'. For other non-Samuel passages see Dahood (1967.427).

The next set of forms we examine is illustrated by 2 Sam 18.3: 'And the people said, you must not go out, for if we must flee, they will not pay any attention to us ('set heart to us')'. Here 'to us' is ʔēlēynū in the Masoretic Text, l-n-w (lanū) in a Dead Sea Samuel fragment, and ephēmas in the Greek (LXX), which has been thought to reflect Hebrew ᶜalēynū 'upon us' (Ulrich 1978.107-8; cf. McCarter 1984.399-400). Here the prepositions l-, ʔel and ᶜal are all involved. Proto bases from which these may derive and the consonant ablaut forms thereof, along with some attested consonantal reflexes, are:

| | | | | | | |
|---|---|---|---|---|---|---|
| 1. | ** l-ʔ | l- | ** lH-ʔ | r- | ** Nl-ʔ | n- |
| 2. | ** ʔ-l | ʔ-l | ** ʔ-lH | ʔ-r | ** ʔ-Nl | ʔ-n |
| | ** ʔH-l | ḥ-l | ** ʔH-lH | ḥ-r | ** ʔH-Nl | ḥ-n |

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3. **h-l h-l ** h-lH h-r ** h-Nl h-n
**hH-l ᶜ-l ** hH-lH ᶜ-r ** hH-Nl ᶜ-n

With regard to the use of l- and ?el in 2 Sam 18.3, we note a similar alternation of n (from **Nl-?) 'to' and ?-r (** lH-?) 'toward' in Egyptian in a semantically parallel construction: 'Had not the army of his Majesty set their heart on (?-r) plundering'; 'Do not set your heart on (n) pleasure(s)' (Urk. 4.658, An 3.3.10, both quoted in Erman and Grapow, Beleg. to 2.468.5). Interestingly, LePage Renouf remarked in 1874 that the preposition r was 'both phonetically and grammatically akin to' n (1903.2.25).

The general meanings assigned to the three Hebrew prepositions are: l- 'to, for, with regard to', ?el 'to, toward, into, with regard to', ᶜal 'upon, beside, on account of'. Given such semantics, one is not surprised by some overlapping usage. Driver (and others, of course) note ?el used in the sense of ᶜal and vice versa (1890.295-96 [index]).

The preposition l- is from the base ** l-? 'mouth, to, toward' (Hodge 1988.199-200, 1989.228-29). A lectio difficilior involving l- is found in 1 Sam 2.29 'every offering of Israel my people (ləᶜammī)'. We expect ləᶜammī to mean 'to my people', and Driver says of the phrase, 'this again cannot be right' (1890.30). Ehrlich explains the l- as dittography after yiśrā?ēl (1910.17 176). What is overlooked is the use of l- as indicating equivalence, here 'Israel, namely my people'. Other examples are: 1 Sam 1.16 'do not take your maidservant to be (l-) a wicked woman' ('unclear' to McCarter 1980.54; see Driver 1890.12). 1 Chr 7.11 'all of these sons of Jediael were (l-) heads of families'.

For centuries l- was considered a shortened form of ?el (e.g., Buxtorf 1663.314, attributing this to rabbinic tradition; Fürst and Ryssel 1876.1.646). Modern scholars treat the two as separate. ?el is given as related to Arabic ?ilā 'to, toward' (Klein 1987.28, 291). Ar. ?ilā is from ** l-? with prothetic alif, ** (?-)l?á (cf. Hodge 1987). It is reasonable to connect Heb. ?el with this, especially as there is the long form ?ilēy- before pronouns (cf. Coptic ero- ' toward, from the same base, before pronouns). To accomodate these and related forms we set up:

la **(?-)l-? ?el **(?-)-lH-? Eg. ?-r-? **(?-)Nl-? Akk. ana 'to'

As the ?- is prothetic, it has no ablaut variants. For Eg. r-? 'mouth, to, toward' and the prothetic alif involved see Hodge (1988.199-200).

In most cases we find that ?el is used in a directional, to or toward, sense. Scholars have had difficulty reconciling this use of ?el with places where the sense is that of place where rather than place to which. For

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example, in 1 Sam 10.22 we read: 'he hid himself among (?el) the baggage'. Driver thinks 'hid himself' is directional, so that (?el) is used (1890.65). This is unnecessary. Here ?el has a place where meaning.

There are numerous instances where ?el is used where one expects ᶜal. In 1 Sam 3.12 we have 'against (?el) Eli'. Driver considers this a use of ?el 'with the force of' ᶜal (1890.35). In 1 Sam 5.6 we read 'the hand of YHWH was heavy upon (?el) the Ashdodities'. Driver comments that ᶜal 'would be more usual' (1890.41).

The derivation of ?el from **(?-)l?- fits the 'to, toward' meanings but not the place where ones and is difficult to reconcile with those where ᶜal would be appropriate. We therefore ask whether ?el might be of dual origin, a merger of forms from a predominantly place to which base with those of a base with a place where meaning. A form for which we reconstruct a proto base **?-l is Eg. ?-3-t 'back (of man or animal); middle of (river or lake)' (Faulkner 1962.7, Erman and Grapow 1.26). This is reflected in Coptic hio̅o̅- (plus pronoun) 'upon', from ḥ-r 'on' plus ?-3-t 'back' (Vycichl 1983.285). The core hieroglyph is that of the backbone and ribs of an animal (Sign List F37, Gardiner 1957.465). As such the back is horizontal, and we find derivatives of this base reflecting 'the surface', 'on the surface of', 'on'. We conclude that Heb. ?el in its place where meanings derive from **?-l 'back', rather than from **(?)l?-.

Such an analysis becomes even more plausible when we consider other derivatives of **?-l, especially different ablauts. Egyptian has ḥ-3 (from **?H-l) 'hinder part, back', Co. (B) hē, also used as a preposition 'behind'. **?H-lH yields Eg. ḥ-r 'face' and the preposition ḥ-r 'upon'. **?H-Nl appears to be the source of Eg. ḥ-n-t-y 'the two sides or ends' and is possibly that of Sem. *ḥ-n as in Ar. ḥanā 'bend down (Klein 1987.223, sub ḥ-n-h). The semantic connection may be the bending of the back or the motion toward a surface (i.e., the ground), or to both.

Another example of a place where use of ?el is in 1 Sam 21.5. Ahimelech says to David, 'there is no ordinary bread here with me ('?el under my hand')'. Driver says the use of ?el 'is destitute of analogy' and 'is in fact redundant' (1890.138). McCarter calls it 'a corrupt dittograph' to be deleted (1980.347; so Ehrlich 1910.242). It is true that taḥat yādī by itself is used adverbially to mean 'under my hand'. The addition of ?el to indicate place where is to that extent redundant, but it is not wrong. It is a normal kind of redundance: 'at the place under my hand'.

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In some cases it is not possible to determine with certainty which proto base lies behind a particular use of ?el. An example is in 2 Sam 8.7: 'and David took the golden shields (or, bow cases) which were on ?el) [= carried by] the officers of Hadadezer'. So interpreted, ?el is from ** ?-l. One could also think of ?-l. One could also think of ?el as an allomorph of l- and read 'which belonged to' (contra Driver 1890.216). McCarter emends ?el to ᶜal, taking 'that were upon' = 'carried by' (1984.242, 250).

We cannot at this time determine whether the two ?el's were separate forms in the spoken Biblical Hebrew of the time and place of David. We can lay aside some of our preconceived notions as to what is proper in Biblical Hebrew.

Heb. ᶜal 'upon' is from the ablaut form ** hH-l of the base ** h-l 'be high'. This and related forms are discussed in my paper on Hallelujah (Nineteenth LACUS Forum 1992). While in most cases ᶜal has the sense of 'over, on, against', there are others where the meaning is simply 'to, toward'. In 1 Sam 2.11 Elkanah went 'to (ᶜal) his house'. The passage has been a problem for centuries. Drusius (Johannes van den Driesche 1550-1616) thought that ᶜal was used here instead of ?el (Poole 1684.1.2.16). Schroeder said that ᶜal after hālak 'go' was rare, the preposition usually being ?el (1834.1.327). Driver noted that several manuscripts have ?el here and in 1 Sam 1.10. He further remarks that there is a tendency to use ?el and ᶜal interchangeably throughout the books of Samuel (1890.10, 22).

Exploring the possibility that here, too, we have a dual origin for an etymon, we find many forms which reflect a different ** h-l base, one meaning 'other', to which our problematic ᶜal may be traced. The plain base occurs in Heb. hălōm 'here, to here' (Ug. h-l-m, Ar. halumma 'hither', Klein 1987.151) and in Eg. h-3-w 'neighborhood'. Cushitic has * hal-/* hil- 'other' (Ehret 1987.126). ** hH-l yields Heb. ᶜal 'next to' (1 Sam 4.1), 'to, toward' (1 Sam 2.11), Eg. ᶜ-3 'here, there, yonder', IE * al- 'beyond'. ** hH-lH is back of Eg. ᶜ-r-w 'proximity;., ** hH-Nl gives us Ar. ᶜan 'away from' and Oromo aana 'next to'. We conclude that Heb. ᶜal is also a merger of two bases, ** h-1 'be high' and ** h-1 'other'.

The following summarizes the sources of the Hebrew lexemes discussed in this section, adding some related etyma as further data.

1. ** l-? Heb. la- 'to, for', Ar. li- 'to, for'
   ** lH-? Eg. r-? 'to, toward'
   ** Nl-? Geez na- 'as for', Eg. n 'to, for', Hausa na 'pertaining to'

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1a. ** (?-)l-? Heb. ?el 'toward'? Ar. ?ilā 'toward', Co. (F) ela- (plus pronoun

** (?-)lH-? Eg. ?-r-? 'toward', Co. ero- (plus pronoun), Chadic *?-r 'path'

** (?-)Nl-? Akk. ana 'to, for'

2. ** ?-l Heb. ?el 'on', Eg. ?-3-t 'back'

** ?H-l Eg. ḥ-3 'occiput', Hitt. halanta- 'head'

** ?-lH Eg. ?-r 'on' (Erman and Grapow 2.387.22-23)

** ?H-lH Eg. ḥ-r 'face; on', Hitt. harsan 'head', Luwian harmahi- 'head'

** ?-Nl Akk. ina 'in', IE *en 'in'

3. ** h-l Eg. h-3 'get up!', Heb. halalū 'exalt!'

** hH-l Heb. ᶜal 'on', Eg. ᶜ-3 'big'

** hH-lH Eg. ᶜ-r 'go up'

** h-Nl IE *an 'on' (** hH?)

4. ** h-l Heb. hălōm 'here', Eg. h-3-w 'neighborhood', Cu. *hal- 'other'

** hH-l Heb. ᶜal 'next to, toward; Eg. ᶜ-3 ;'here, there', IE *al- 'beyond,

** hH-lH Eg. ᶜ-r-w 'proximity'

** hH-Nl Ar. ᶜan 'away from', Oromo aana 'next to'

The Hebrew text of Samuel is in a state of arrested animation. There is evidence of deliberate standardization, but this has not been consistently carried out. Variants and lectiones difficiliores reveal elements of an earlier text. Comparative linguistics helps support the genuineness of many non-standard usages.

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# Correspondence between Japanese kuro and Korean kem(black)

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## 0. Introduction

Japanese and Korean primary color terms for the equivalents of "red" and "black" originated in the terms of "light" and "dark". And the correspondence between Japanese(J henceforth) aka and Middle Korean(MK henceforth) pAlk(red) was proven by Martin with his phoneme correspondence laws(*1). The correspondence between J kuro and MK kem (black), however, is left unproven.

The two obstacles which might have hindered Martin from proving their cognation are most probably his inability to establish correspondence laws between Japanese vowel /u/ and Korean /E/(*2), and Japanese /r/ and Korean /m/ of intervocalic and final positions.

In the paper to be presented, the cognate relationship between J kuro and MK kem(black) is proven by establishing supplementary laws u/E and r/m. And these supplementary laws u/E and r/m are to be supported by the evidence shown below. And our hypothesis of Japano-Korean doublet correspondence will also support our supplementary law r/m.

*1 Samuel E. Martin, Lexical Evidence Relating Korean to Japanese, Language, Vol. 42, No. 2, 1966, p.239

*2 /E/ shows /ə/, and Korean is transcribed in the Yale Romanization.

## 1. A Supplementary Law u/E

In order to establish a supplementary law u/E, we will show the evidence that Japanese vowel /u/ corresponds with Korean /E/.

J kumo = MK kemuy(spider) 4-u/E-2a-21c + K noun suf. -i
J tuki(desk) = MK tek(shelf) 4-u/E-4a-15d cf. J tuku-we(desk)
J tuki(to pound) = MK stek(rice cake) K pref. s- + 4-u/E-4a-15d
J mura(a roll of cloth) = MK pel(a piece of clothing) #5(*3)-u/E-11-23
J purui(old) =MK hel-(to become old) #2(*4)-u/E-11-22 + J adj. ending -i
J use = MK keci-(to disappear) #3(*5)-u/E-9d-16a
J tuyoi = MK sey-(strong) #4(*6)-u/E-15 + J adj. ending -i

We can add one more example, i.e., J turu(vine) and MK tempul(bush). In order to prove the correspondence between them, however, we encounter the same difficulty as we have when we prove the correspondence between Japanese kuro and Korean kem(black). For we lack such a law as to prove the correspondence between Japanese intervocal /r/ and Korean /m/. And we will proceed to prove the correspondence with the evidence shown next.

*3 cf. Ishii, A supplement to Marin's lexical evidence, 18th LACUS Forum.

*4 cf. ibid.

*5 cf. ibid.

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*6 cf. ibid.

## 2. A Supplementary Law r/m

We will show the evidence for the correspondence between Japanese intervocal /r/ and Korean /m/ in order to establish a supplementary law r/m, and to prove the cognacy between J kuro and MK kem (black), and J turu (vine) and MK tempul(bush).

J turu(vine)= MK tempul(bush) 6-u/E-r/m- 22 + K suf. pul(grass)
J piru = MK kemeli(leech) p/k(*7)-15c-r/m-u/E-12b + K suf.-i
J pora(cave) = MK kwum(hole) p/k-20b-r/m-23
J karasu = MK kamakoy(crow) 4-17-r/m-17 + J suf. -su/ K suf.-koy
J paru = MK pom(spring) 1-18a-r/m-19c
J wodori = MK chwum(dance) J pref. wo- + 9-5c-21c'-r/m-15d
J kuri = MK pam(chestnut) k/p-21-r/m-15d
J tugomori=MK kumum(last day of a month) J pref.tu+4-21c-2a-21c-r/m-15d
J tori-de(fort)〜MK tam(wall) 6-21b-r/m-15d + J suf.de

Incidentally, Japanese torii or a gate for Shinto shrine is a cognate with Japanese tori-de(fort), Korean tam(wall), and old Turkish tura(fort). And its original meaning is a fence for a sacred place. Its suffix is traditionally transcribed -wi, and it signifies "place" as we can see from such Japanese words as kura-wi(rank), and siki-wi(threshold).

*7 cf. ILT NEWS, Vol. 91, Waseda Univ. Goken, 1992, pp.32-38

## 3. Reconstructing proto-Japano-Korean *kara(black)

With our establishment of these supplementary corresponding laws, u/E and r/m, the corresondence between J kuro and MK kem(black) is proven as 4-u/E-r/m-21b'. It is, however, inconceivable that /r/ shifts to /m/, with little similarity in their articulation points. And it is supposed that MK kem(black) is derived from the reconstructed proto-Japano-Korean *kara(black) with a noun suffix -m, as the Korean loss of /r/ is proven by Martin's law 11aa(*8). And the same law verifies the correspondence between J uri and MK oy(melon)(*9).

We would like to verify our claim that MK kem(black) has lost its /r/ in exchange for its noun suffix -m by showing the same case with Middle Korean kumum(the last day of a month).

*8 Martin, p.210
*9 Martin, p.236

## 4. Noun suffix -m and the loss of intervocalic /r/

By comparing Middle Korean kumum(the last day of a month) with its dialect forms kulum and kumwulkkey(*10), we notice they retain the missing /r/ with Middle Korean kumum; kulum retains its /r/ while its doublet kumwulkkey changed the position of /r/ by metathesis.

We can find the cognate stem in Japanese tugomori(id.). We believe it also changed the position of its /r/ by metathesis. Traditional etymology explains its morphemes as tuki(moon)-kumori(cloudy): the moon does not appear on the last day of a month in the lunal calender. We believe Japanese tugomori shifted into its present form by seeking its semantic identity.

We morphoanalyze the reconstructed form of the word into tu(prefix)-*kara(stem)-m(noun suffix), i.e., the word is cognate with Japanese kuro and Korean kem(black). The same prefix tu is observed in Japanese tunami (tidal wave), tuzi(cross roads), tuti(hammer) etc: We can recognize tunami is a prefixed form of Japanese nami(wave), and tuzi is derived from Japanese ti(road), a cognate to Middle Korean kil(id.), and it is easily recognized by comparing Japanese tuti with its Korean cognate mang-chi (hammer), or chi-(to hit). As to the Japanese shift /t/ > /z/ observed between Japanese miti(road) and tuzi(crossroads), we can find the same shift between Japanese nizi(rainbow) and its dialect form nidi(id.).

Martin reconstructed proto-Japano-Korean *kulmo(cloud)(*11). We believe the final -m of Middle Korean kwulwum(cloud) is a noun suffix and so was the -mo of Japanese kumo(id.) originally.

We can show an interesting example: Japanese kemu/kemuri(smoke) is a doublet to Japanese kumo(cloud). We can show a Korean cognate morpheme kwul- in Middle Korean kwul-tok(chimney).

When we morpho-analyze Modern Korean kuulum(soot), we must carefully examine its Middle Korean form kozulum(soot) and its dialect forms. By doing so we notice that the stem -*zulum of Middle Korean kozulum(soot) is cognate to Japanese susu(soot) and sumi(charcoal/indian ink); J susu (soot) is prefixed by su-, while the latter sumi(charcoal/indian ink) is suffixed. The initial syllable ko- of Middle Korean kozulum(soot) is derived from proto-Japano Korean *kara(black) and is cognate with Japanese kuro and Korean kem(black).

If we try to find a cause of Middle Korean kopang(closet) generating a dialect form kolpang(id.), the word is either erroneously morphoanalyzed into ko(black/dark)-pang(room) though it is generally believed to be a borrowing from Chinese ko(庫)pang(房), or Middle Korean kolm-(store) is suffixed by pang(room) as we can present a very similar Japanese word kura(store house).

We can show other evidence to verify the legitimacy of our morphoanalysis of Middle Korean kozulum(soot) as ko-(black)-zulum(soot); i.e., Middle Korean kamakoy(crow) is morphoanalyzed ka-makoy(*12). According to the analysis done by Swung-Nyeng I, the word has two morphemes, ka (black)-makoy(suffix). We can see its ka- is a doublet of ko-(black) of Middle Korean kozulum(soot). The evidences we have shown also support our claim that the final -m of Middle Korean kem(black)is a noun suffix, which is lacking in the Japanese cognate kuro(black). Its doublets kemu (smoke) and kumo(cloud), however, got one.

Middle Korean kulim(shadow/ picture ) and kAli(shadow) retain the /r/ of Proto-Japano Korean*kara(black), which Middle Korean kem(id.) lost. Japanese kage(shadow) was derived from proto-Japano Korean *kara(black) changing /r/ into /k/ as Martin's law 12d proves(*13).

*10 崔鶴根『増補韓国方言大辞典』明文堂, 1990,p.175
*11 Martin, p.228
*12 李崇寧『国語造語論考』,乙酉文化社,1961,p.161
*13 Martin, P.211

## 5. Japano-Korean doublet correspondence

In Indo-European languages, Grimm's classical law is always applied in one direction, while between Japanese and Korean, if a Japanese phoneme x corresponds to a Korean y, the contrary correspondence seems to exist, i.e., a Japanese phoneme y corresponds to a Korean x.

Martin tried to prove the correspondence between Japanese tarapi and Korean taya(washtub)(*14). If he had noticed the doublet-correspondence, he would have established a law to prove Japanese intervocalic /r/ corresponds to Korean /y/, a doublet to his law 13 proving Japanese intervocalic /y/ corresponds to Korean /l/.

We can prove the cognacy of Japanese tarapi and Korean taya(washtub) by the doublet law to Martin's law 13, as well as Japanese mirume (sea weed) corresponds to Middle Korean meyok(id.) by using Martin's laws and the doublet supplementary law r/y to his law 13 as 2-15c-r/y-19b + J suf. -me/ K suf. -k. By the same supplementary law r/y, we can also prove that Japanese sugaru(digger wasp) is cognate to Middle Korean kayami(ant) as J pref. su- + 4-17-r/y-21 + K suf.-mi.

The hypothesis of the reciprocal phoneme correspondences between Japanese and Korean, which we would like to call doublet-correspondence, is to be applied to our newly established supplementary law r/m, and we can establish another doublet correspondence law m/r, which proves that Japanese intervocalic /m/ corresponds to Korean /r/, e.g.:

J simo = MK seli(frost)(*15)
J Koma = MK Kolye(an ancient kingdom of Korea) 4-20-m/l-15a-17a
J kami(hair) = MK kalki(mane) 4-17-m/l-15d + K suf. -ki

The cause of the reciprocal phoneme-correspondence between Japanese and Korean, we believe, is that these sister languages have influenced each other either through conquest or through friendly migration since the primodial days down to historical time as we can find in the Kojiki and Nihonshoki, in a scale far greater than we suspect.

*14 Martin, p.246
*15 Martin, p.248 14-15c-12c-32

## 6. Conclusion

Our first claim Japanese kuro cognate with Middle Korean kem(black) is verified by establishing supplementary laws u/E and r/m. With regard to our second claim, Japano-Korean doublet correspondence, however, we need to show more evidence, some of which are already shown(*1). We shall do a further study on the theme and would like to present a related paper at the next LACUS Forum.

*1 Ishii, Japanese and Korean /k/-/p/ Correspondence, 19th LACUS Forum

# SEMANTIC SHIFT AND THE CONCEPT OF SERVITUDE

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Terms for servitude and related concepts demonstrate a crosslinguistic tendency to shift due to a pejorization of the idea of service. Positive and negative meanings of the term for the master/servant relation can sometimes coincide, as is seen in Kings I, 9:22, where the word עבד is used twice in the same verse, once meaning ‘slave’, a lowly and disgraceful position, and the second time meaning a ‘servant of the king’, which included the king’s closest advisors. There is no indication of awareness that the same word is used:

> ומבני ישראל לא-נתן שלמה עבד כי הם אנשי המלחמה ועבדיו ושריו ושלישיו ושרי
> רכבו ופרשיו.
>
> ‘But Solomon did not make **slaves/servants** of the children of Israel **because they were** the men of war and his **slaves/servants** and his ministers and his deputies and the ministers of his chariots and his horsemen.’

This paper will examine crosslinguistic currents in semantic shift of terms for servitude. By the same token, the conceptual systems which make use of these terms will also be closely inspected. In particular, the legal doctrine of *Respondeat Superior*, holding a master liable for the torts of his servant, will be examined for a historically shifting view of the employment contract. While the doctrine was initially based on a vertical relation between master and servant, with the servant acting as a mere instrumentality of the master, more modern treatments of the same issue reveal interesting twists in the concept of servitude. While the term *employee* has virtually displaced *servant* and a greater equality between both sides of the employment contract is implied, the continued application of the doctrine of ‘Let the master answer’ in conjunction with the view that the employment agreement is an *adhesion contract* reveal that there has been less of a conceptual change than might have been expected.

Shifting lexical labels for the same concept will be contrasted with changes in the conceptual system itself. Tools for identifying functionally "identical" concepts in a shifting relational framework will be discussed. While any change in the conceptual system entails a change in the meaning of every item, similar relations can be maintained and identified. This paper will discuss the methodology for doing so and the theory behind it.

## I. Servants and Slaves

There are 799 instances in the Old Testament where some form of the word עבד [’eved] appears. (Even-Shoshan 1992.819-823.) Its closest English equivalent is *servant*. Not unlike the word servant in English, עבד varies in meaning on a continuum between a slave on the one hand and a fiduciary of a high-ranking official on the other. On the lower end of the scale, an עבד can be a bondsman stripped of any rights, stereotypically reduced to drudgework with no reward for his services. On the high end, such a person can be a valued subordinate, free to make important decisions on his lord's behalf, privy to his master's secrets and whose responsibility is to carry out sacred duties, the fullfilment of which is a great privilege and honor. Cabinet members are seen as servants of the King, vassals are servants of their overlords, and even the King himself is a servant of God. Higher level עבדים are much like our modern day 'public servants' in positions of power. The contrast between the lower end of the service spectrum and its antipode is such that the concept attached to the word seems different and distinct. On the conceptual level, a split occurs.

In Kings I, 9:22, the word עבד is used twice in the same verse, once meaning 'slave', a lowly and disgraceful position, and the second time meaning a 'servant of the king', a high ranking official. So ingrained are the two different meanings of servant that there is no awareness that the same word is used:

(1)

ומבני ישראל לא-נתן שלמה עבד כי הם אנשי המלחמה ועבדיו ושריו ושלישיו ושרי רכבו ופרשיו.

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[umibnej            jisra?el lo natan  slomo   'aved]
{and-from-the-sons-of Israel not-gave  Solomon servant}

[ki  hejm ansej   hamilxama  we'avadaw]
{for they men-of  war(def)   and-his-servants}

[wesaraw       wesalisaw  ]
{and-his-ministers and-his-deputies}

[wesarej          rixbo        ufarasaw   ]
{and-ministers-of his-chariot  and-his-horsemen.}
```

'But Solomon did not make slaves/servants of the children of Israel because they were the men of war and his slaves/servants and his ministers and his deputies and the ministers of his chariots and his horsemen.'

The word עבד derives from the root meaning 'work' or 'service'. One might infer an explanation for the two separate and distinct meanings of עבד by saying that one reflects a crosslinguistic tendency to pejorization of a position of service, while the other exalts the concept of service by a parallel meliorization. Hock discusses a similar phenomenon with regard to the OE *cniht* 'boy;servant' which became the NE *knight* 'nobleman' and at the same time developed into the German *Knecht* 'serf'. (Hock 1991.302).

While the parallels are apparent, the process is more startling when we have an example of the two interpretations coexisting within the same sentence. In fact, in Kings I, 9:22 the contrast between the two meanings is pivotal. The gist of the message was that the children of Israel were not made slaves because they served Solomon in important fiduciary positions. Hock's explanation of the process of meliorization and pejorization is not sufficient to describe what has occurred here.

Meliorization and pejorization are based on value judgments with regard to desirability of the same concept. It is "good" to be a servant of God; it is "bad" to be a slave. An example of a sentence where the contrast being asserted is merely one of value judgment, rather than outward fact, would be: "He's not stingy; he's frugal!" Here both labels 'stingy' and 'frugal' presumably apply to the same fact situation. The issue under debate is the desirability of the agreed facts. (Lakoff 1987.132).

In determining whether someone is a servant or a slave, more is involved than value judgment. The logical, denotative meaning of the term has shifted, not merely the connotation. I will now turn briefly to a simple formalism that will help to distinguish the two denotations.

In defining the strong distinction between the 'slave' meaning of עבד and the 'honorable servant' version, I will resort to the concept of **vertical** versus **horizontal** relationships. 'Servant' is after all a relational concept, defined by the relative positions of master and servant or lord and serf. The lowly slave finds himself in a direct vertical relationship to his master. He serves as an instrumentality of the master, asserting no will of his own. This relationship is illustrated by side A,B of the triangle in Figure 1.

A purely horizontal relationship is what is known as an arms-length transaction, where both parties are full participants. Each exercises complete free will and volitional control over his own participation. Each has the right to refuse to render services. This relationship is illustrated by Figure 2.

In reality, very seldom, if ever, does one find relationships that are purely horizontal or purely vertical. The 'honorable servant', in his relation to his superior, finds himself at the lower edge of side A,C in Figure 1. Such a servant is not in complete control of his actions, yet he has much leeway in how he chooses to carry out his obligations.

In order to pursue both the denotative and connotative shifts exemplified by the usage of the word עבד Kings I, 9:22, I will now turn to more modern examples.

## II. Respondeat Superior

Feudal concepts of service linger to this very day. During recent swearing-in ceremonies for cabinet ministers in Canada, the following oath was administered:

> "I, ________, do solemnly and sincerely swear that I shall be a true and faithful servant to Her Majesty, Queen Elizabeth the Second, as a member of Her Majesty's privy council for Canada. I shall keep secret all matters revealed to me in this capacity or that shall be secretly treated of in council. Generally, in all things, I shall do as a faithful and true servant ought to do for Her Majesty. So help me God."

The 'faithful servant' conjured by this oath hearks back to feudal concepts of loyalty and sacred duty. The relationship between servant and lord can be termed largely vertical, but not purely so. The servant is not a mere instrumentality of his overlord. The duties of service, obedience and loyalty flow from the servant to the overlord. But by the same token, responsibility for protection and support of the servant flows from the lord to his subjects. Loyalty is reciprocated. (Figure 1).

In employment relationships not involving public office, the word *employee* has by and large replaced *servant* in most forms of Modern English. The need

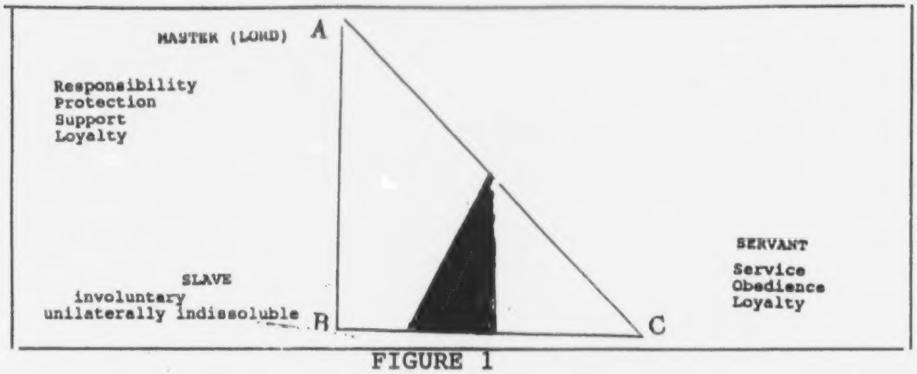
MASTER (LORD)
A
Responsibility
Protection
Support
Loyalty
SLAVE
involuntary
unilaterally indissoluble
B
C
SERVANT
Service
Obedience
Loyalty

FIGURE 1

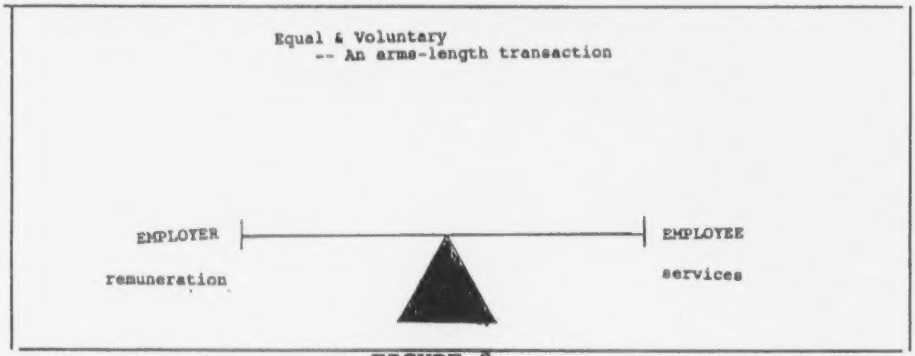
Equal & Voluntary
-- An arms-length transaction
EMPLOYER
remuneration
EMPLOYEE
services

FIGURE 2

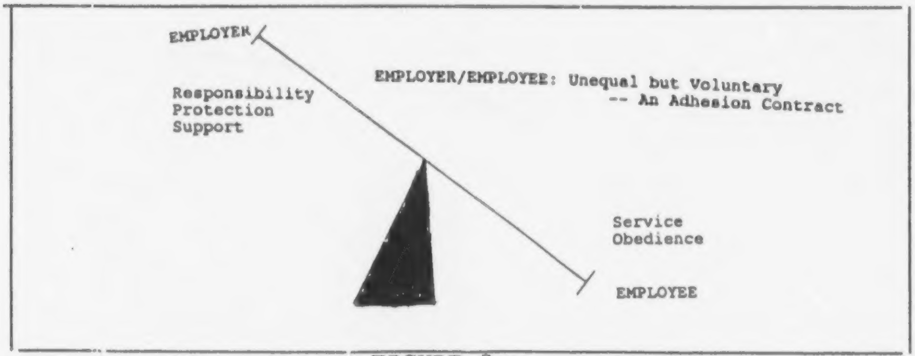
EMPLOYER
Responsibility
Protection
Support
EMPLOYER/EMPLOYEE: Unequal but Voluntary
-- An Adhesion Contract
Service
Obedience
EMPLOYEE

FIGURE 3

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for such a replacement can be explained by the process of pejorization discussed above. Except for archaic phrases such as *your faithful servant* or *public servant*, Modern English has relegated the word to denote a domestic or a drudge.

And yet, in some respects one can claim that the change is not merely one of negative connotations attached to the older word, but that the rights and duties of an employee are distinct from those of the earlier servant. To that end, we will now examine the development of the legal doctrine of *Respondeat Superior*.

The Restatement, Second Agency 219 gives the doctrine as follows: "A master is subject to liability for the torts of his servants committed while acting in the scope of their employment." This is the modern equivalent to the maxim *respondeat superior*. A related phrase is *qui facit per alium facit per se*. (Steffen. 1980.211). Yet Respondeat superior involves a great deal more than a mere agency relationship. Not every agent subjects his principal to liability for his own torts. Independent contractors don't. The doctrine applies only between masters and servants. Modern cases often substitute *employee* for *servant* and *employer* for *master*. The docrtine remains unaltered. The labels have changed.

The earliest known authority on the doctrine is *Jones v. Hart* (1698). Holt C.J. explained it as follows: "If the servants of A. with his cart run against another cart, wherein is a pipe of wine, and overturn the cart and spoil the wine, an action lieth against A. So where a carter's servant runs his cart over a boy, action lies against the master for the damage done by his negligence; and so it is if a smith's man pricks a horse in shoeing, the master is liable. For whoever employs another, is answerable for him, and undertakes for his care to all that make use of him."

Underlying this concrete statement of the doctrine, we can easily detect a vertical concept of the master/servant relation, wherein the servant is seen largely as an instrumentality of the master.

In *Quarman v. Burnett* (1840) we are given a more abstract explanation for the underpinnings of the doctrine. "... and that person is undoubtedly liable, who stood in relation of master to the wrongdoer -- he who had selected him as his servant, from the knowledge of or belief in his skill and care, and who could remove him for misconduct, and whose orders he was bound to receive and obey." Note that instrumentality of the servant is described here in terms of duty to obey. Responsibility for the acts of the servant is attributed to the master because he is deemed to control the servant's actions.

However, the vertical relationship underlying vicarious liability for the act of a servant goes against the grain of modern notions of equality before the law. The nineteenth century fostered a view of contractual relations between individuals that was horizontal, as illustrated in Figure 2. Because *Respondeat Superior* stems from a conceptual system at odds with the concept of the rights of man articulated in recent times, legal scholars of the nineteenth and twentieth centuries refer to the doctrine as one based on a legal fiction. According to Holmes, *Respondeat Superior* is said to be a "survival from ancient times of doctrines which in their earlier form embodied certain rights and liabilities of heads of families based on substantive grounds which have disappeared long since.... in modern days these doctrines have been generalized into a fiction ... that ... principal and agent are one." (Holmes 1921.49) as cited in (Steffen 1980.211.)

How much of a fiction is involved depends largely on the prevalent legal and social concept of the employment relationship. It is this concept that we will now begin to explore.

*Respondeat Superior* does not relieve the employee or servant from the liability for his own acts. It merely assures third parties that they will be able to call upon the superior to right the wrongs of his subordinate, leaving the master full recourse to recoup his loss from the servant. As Steffen puts it: "The employee, as a member of society, is still made liable for his own torts, according to the law worked out in an earlier, individualistic society." (1980.211). It is unclear when this earlier, individualistic society might have existed. Surely not during biblical times, where a son honored his father and a servant his master (Malachi 1:6), or under the Romans, or in the Middle Ages, where the feudal system enforced vertical master/servant relations.

The place where this individualistic society may be found is in the political philosophy of the Enlightenment. In legal theory, such an idealized relation between men is represented by the concept of freedom of contract.

Contract law was sorely neglected in medieval times. Feudal society "assigned each man a niche, a status, which rather rigidly delineated the conduct expected of him and which he might expect from others. Enforcement of a voluntary assumption of duties of the kind we now call contractual tended to disrupt this status oriented society." (Calamari 1977:5)

"In the heyday of the Enlightenment era there was a widespread belief in, and great stress was placed upon, the existence of inalienable rights which existed prior to and independent of government. ...Although this natural law could be logically consistent with other possible views, historically it was intertwined with the idea that, 'I am bound because I intend to be bound.' Intention is the keystone of contract law." (Calamari 1977:7). The central idea behind the freedom of contract is "the sovereignty of the individual will." (Ibid:8).

Where both individuals in a service contract are regarded as free to negotiate the terms and to accept or reject any and all offers, neither party will be regarded as a mere instrumentality of another. Each will be responsible for his own actions. The rationale behind *Respondeat Superior* would not apply.

Many modern legal scholars adhere to the idea that *Respondeat Superior* is a legal fiction, because they would prefer to give credence to the horizontal relationship illustrated in Figure 2. Such scholars speak of the "deep pocket" of the employer, implying that the doctrine is a device perfected to insure recovery for the wronged party from the richest available innocent bystander, namely: the employer. Steffen quotes Baty, Vicarious Liability (1916): "'In hard fact, the real reason for employer's liability is ... the damages are taken from a deep pocket. The present is not a propitious time for withstanding a dogma based on such a principle. But a return to simpler manners will probably bring with it a return to saner views of liability ...'" Steffen then comments sardonically: "The intervening decades show little evidence of a return to simpler manners." (Steffen. 1980.212) If recent developments in contract law are examined closely, we may find that the Enlightenment view of horizontal relations is the anomoly. If there is a legal fiction involved, it is that the law treats employees as having volition of their own.

"In the twentieth century the tide has turned away from the nineteenth century tendency toward unrestricted freedom of contract... Contracts of employment are controlled by a wide range of Federal and State laws concerning minimum wages, hours, working conditions and required social insurance programs." (Calamari 1977:5). Note that these provisions, seen as protective measures on behalf of persons who are defenseless against their employer, are not very different in nature from Biblical law designed to protect עבדים. Requiring the employer to provide a rest day on the Sabbath is just such a provision. (Deuteronomy 5:14.)

Calamari prefaces his explanation of the concept of adhesion contracts with the following remark: "There has been increasing recognition in legal literature that the bargaining process has become more limited in modern society." (Ibid.) We might interject that it was even even more limited in ancient society. The contrast being made apparently refers to the difference between nineteenth and twentieth century America.

An adhesion contract is one that a consumer or employee has the right to accept or reject in toto, but whose provisions he is powerless to change.

"Most of contract law is premised upon a model consisting of two alert individuals, mindful of their self-interest, hammering out an agreement by a process of hard bargaining. The process of entering into a contract of adhesion is not one of haggle or cooperation but rather of fly and flypaper." (Calamari 1977:5) Freedom of contract is not permitted under such circumstances. The law intervenes and alters the agreement according to the pre-ordained status of the respective parties. It is this status, as in the Middle Ages, that once more "rigidly delineates the conduct expected of an individual and which he might expect from others."

The modern definition of an employee parallels pre-Enlightenment views of the role of a servant: "A person in the service of another under any contract of hire ... where the employer has the power or right to direct the employee in the material details of how the work is to be performed ... Generally when a person for whom services are performed has the right to control and direct the individual who performs the services, not only as to the result to be accomplished by work but also as to details and means by which result is accomplished, the individual subject to direction is employee ... Servant is synonymous with employee." (Black 1979.471)

If we examine the expectations concerning modern employees we will find that the relationship is as illustrated in Figure 3. Comparing the relation between servant and master in Figure 1 to that of employer and employee in Figure 3, we find that they are congruent. The same degree of verticality is involved in both cases. The only missing element is loyalty.

The lexical item *employee* may have supplanted *servant*, but the concept for which it once stood is functionally equivalent. The legal fiction involved in the doctrine of *Respondeat Superior* is not the instrumentality of the employee, but rather the sovereignty of his individual will under the law.

## III. Conclusions: Semantic Shift against a Shifting Background

The pure vertical relation illustrated in Figure 1, segment AB, is an idealized model that never appears in reality. No person, however deprived of legal rights and practical choices, is truly reduced to an instrument of another. Individual volition manifests itself. No master ever secured services from a servant without some degree of consideration for the needs of the servant. No slave ever did the bidding of his master without at least some degree of volition. The degree of cooperation between the parties varies from era to era and from individual to individual.

By the same token, the equilibrium implied in the pure horizontal relationship between consenting individuals in an arms-length transaction is largely theoretical. In practice, no two people have identical bargaining positions. In any interaction between individuals, one of them is going to be more desperate than the other. Game theory informs us that the less desperate party is the one who will dictate the terms. (Davis 1973.104).

Lexical items such as עבד or *servant* or *employee* do not have rigorous denotative definitions. This is true even when they are used in relatively formal, legalistic settings. It is even more true when ordinary usage comes into play. Figures 1, 2 and 3 are not sufficient to distinguish the terms. At this point we must turn once more to the value judgments which society passes on the concepts for which the lexemes stand.

*Employee* is an emotionally neutral word. It is stripped of the negative connotations of being in another's service, but is likewise devoid of the positive resonance of fealty that *servant* conjures up. Concurrent pejorization and meliorization of the word *servant* have resulted in a split, with the term *employee* substituting for the value neutral servant, whereas the lexeme *servant* is still used for either the drudge or the high echelon "public servant."

The Biblical Hebrew example is unique, in that the split between both positive and negative connotations of service, together with their functional denotations, is apparent on the conceptual level, while the same lexeme serves for both functions. In English, it may be bad to be a *servant* but acceptable to be an *employee*, even though functionally, within legal parameters, the same relationship is being described. But in Biblical Hebrew someone could be an עבד yet not an עבד: only context determines which distinct denotation was intended.

Lakoff writes of ICMs, idealized conceptual models, by means of which speakers define their terms. The conceptual model in question at any given point may or may not be completely consistent with the model used for some other purpose (1987). The delicate balance between the political theory that honors individual sovereignty and the legal doctrines involving employees as instruments of their masters is such an example. Scholars resort to the idea of a "legal fiction" in order to avoid the conflict between social ideology and legal function. By the same token, lay persons using the term *employee* distance themselves from the negative connotations that traditionally accompany the concept of service. In the process, more positive associations of loyalty and dedication are also discarded.

In a relational network model of semantics, the meaning of any item is deemed to be determined by its place within the network of connections. Yet the above discussion demonstrates that it is possible to identify congruent patterns with functionally equivalent semantic loads, despite altered labels and a shifting conceptual background. It is also possible to determine that a functional denotation of two lexemes is equivalent, despite the fact that the value judgments attached to the concept in question are diametrically opposed.

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# CATEGORIAL CHANGES OF BODY PART WORDS IN TWO PORTUGUESE-BASED CREOLES*

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## Abstract

Angolar (A) and Sãotomense (S) are two Portuguese-based creoles spoken on São Tomé, an island located in the Gulf of Guinea (West Africa). Based on data collected during two fieldwork trips this paper will analyze the syntactic and semantic properties of that part of the creole lexicon pertaining to body parts. Toward this purpose the creole corpus will be evaluated in the light of the theory of grammaticalization as formulated in Heine et al. (1991a), i.e., the development of body part words from less to more abstract concepts as described in a metaphorical "chaining" (Heine et al. 1991a:65). This paper concludes with a general discussion on the role of grammaticalization in pidginization and creolization.

## 1.0 Introduction

The islands of São Tomé and Príncipe became independent from Portugal in 1975; since then, they have formed a unified country called São Tomé and Príncipe. Its estimated population is 125,000 and Portuguese is the country's official language.

The larger community on São Tomé is made up of *Forros* (literally 'freedmen'), speakers of a Portuguese-based creole called *Sãotomense* (hereafter S) or *lungwa folo* 'language of the Forros' in their own language. The *Forros* are the descendants of slaves liberated in the late nineteenth century; they cannot understand Angolar, although many Angolares or Angolar speakers learn S. In addition, a small percentage of the population is composed of people of mixed African-Portuguese ancestry (*filhos da terra*), who also speak S but enjoy a higher social status. This group makes up much of the elite which largely dominates public administration and other professions.

Angolar - called *lunga ngola* (hereafter A) or 'language of Angola' by its speakers - is a Portuguese-based creole spoken by approximately 1,000 people (Perl 1989), who live predominantly in settlements scattered along the coast of São Tomé. The Angolares are the descendants of maroon slaves who escaped from the Portuguese plantations on São Tomé in the sixteenth century (Brásio 1953, Ferraz 1974).

Though the Angolares and the Forros have formed two distinct groups since relatively early in the colonization of São Tomé (Castelo-Branco 1971:156), the historical development of A and its relationship to S are not yet well understood; moreover, there is no thorough description of A, and the only small corpus discussed in Ferraz (1974) has been published. In it, Ferraz offered the only linguistic hypothesis regarding the origin of A, namely, that it was the descendant of an early stage in the linguistic development of S spoken by runaway slaves in the first half of the sixteenth century (ibid.:180). Such a historical scenario would explain, according to Ferraz, the different proportions of African lexicon in the two creoles (more Kimbundu in A and more Kikongo and Kwa in S) as well as their morphosyntactic and phonological similarities. Principense or *lungwa Ié* (language of the island) represents the third Portuguese creole spoken in the country and the language of Príncipe Island.

The main goal of this paper is to present a synchronic evaluation of the multifunctional role of body part words in the grammar of A and S. The theoretical arguments presented in Heine et al. (1991a,b) will serve as a general framework for the analysis of body part lexemes in A and S.

## 2.0 Grammaticalization: An Overview

A generally accepted definition of the term grammaticalization is that of Kurylowicz (1965:52) quoted in Heine et al. (1991a:149): "Grammaticalization consists in the increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status, e.g. from a derivative formant to an inflectional one." More generally, this process has been characterized in terms of metaphorical transfer from an input lexeme called the *source concept*, usually referring to a concrete object, process or location, to an abstract concept (Heine et al. 1991a:151). Polysemy and meaning overlapping form "an integral part of the development from a lexeme to a grammatical morpheme" (ibid.:162). One outcome of this is semantic ambiguity and the concomitant problem that the latter poses in general for grammatical description, as Heine et al. clearly demonstrate. For example, Ewe *megbé* can be semantically ambiguous, that is, have an OBJECT (body part), SPACE (behind), TIME (late) and QUALITY (mentally retarded) interpretation, respectively.

(1) OBJECT CATEGORY:
megbé keke-ádé le é-sí
back broad-INDEF be POSS-hand
(a) 'He has a broad back.'
(b) 'Its backside is broad.'

(2) OBJECT & SPACE CATEGORY:
dzra x -á pé megbé dó
prepare house-DEF POSS back ready
'Prepare the back wall of/the place behind the house!'

(3) SPACE & TIME CATEGORY:
é le megbé ná-m
3SG be behind PREP-1SG
(a) 'He is behind me (spatially).'
(b) 'He is late (= he could not keep pace with me).'

(4) TIME & QUALITY CATEGORY:
é tsí megbé
3SG remain behind
(1) 'He remained behind/is late.'
(b) 'He is mentally retarded.'

"Categorial metaphors" are ordered along a scale of increasingly "metaphorical abstraction" from left to right as shown in (5):

(5) OBJECT > SPACE > TIME > QUALITY

Categorial metaphors adopt forms such as "SPACE IS AN OBJECT" or "TIME IS SPACE" (ibid.:159) in which the first category is the topic and the second one the vehicle of the equation. Here, topic is the first element or conceptual category signified in the sentence (e.g. TIME in TIME IS SPACE) and, vehicle is the second element or conceptual category used to signify the former (SPACE in TIME IS SPACE). In (6) the metaphor "TIME IS SPACE" is illustrated for Ewe *megbé*, with TIME and SPACE being the topic and vehicle, respectively.

(6) TIME IS SPACE:
é kú le é-megbé
3SG die be 3SG-behind
'He died after him.'

In describing grammaticalization Heine et al. argue for a "continuum without any clear-cut internal boundaries" (1991a:163) between **any two** categorial metaphors. It is possible to identify intermediate meanings that minimize the discreteness implied by the scale in (5). A case in point is seen in the OBJECT > TIME domain in (7) where the temporal meaning of the lexeme *megbé* has a more-to-less object-like quality as one proceeds from left to right. In (a) *megbé* signifies the temporal object ('the time after') thus being incorporated to the middle-range OBJECT/TIME category; in (b) the lexeme acquires the full temporal meaning ('after') which makes it part of the TIME category.

(7) OBJECT > OBJECT/TIME > TIME CONTINUUM:

(a) é dzó le núdudu-á pé megbé
3SG leave be food-DEF POSS behind
'He left after the eating time.'

(b) é kú le é-megbé
3SG die be POSS-behind
'He died after him.'

Aside from semantic overlapping and continuous grading, grammaticalization shows another salient feature, namely, an asymmetrical configuration. This asymmetry has to do with an interference or **break** in the relationship between cognitive and linguistic structures, which Heine et al. (1991a:174) describe in terms of the iconicity of form and meaning. In their view, the dynamics of the grammaticalization process is driven by conceptual manipulation which catalyzes restructuring at the cognitive level, the latter being summarized in metaphorical equations as the one stated in (6). However, linguistic restructuring of the word takes place after its exposure to conceptual manipulation. For example, *megbé* in (7) still has a nominal character although it acquired a more adverbial meaning, i.e., 'after'.

The data from A and S analyzed below will be shown to manifest several points of convergence with the grammaticalization framework posited by Heine et al. (1991a, b). Although more limited in its scope, this paper shows that their "conceptual framework" could be fruitful when it is applied to similar phenomena (semantic overlapping, grammaticalization chains, form-meaning asymmetry) in creole languages.

## 3.0 Body Parts of A and S: The Corpus

The main lexical language source of the two creoles is Portuguese. African remnants (Kwa, Bantu) are still found in A and S, though their overall contribution to the creole lexicon can be said to be under ten percent. A shows a higher number of African derived words (Ferraz 1979, Maurer 1992) since its speakers, having lived in communities set up outside the plantations, had generally less contact with Portuguese speakers (Lorenzino 1994).

In terms of semantic categories the human body turns up as a mixed lexical domain containing both Portuguese and African words. This is more prominent in S as the result of greater Portuguese borrowing and in light of the more conservative, i.e., African, A lexicon, which probably represents an earlier developmental stage in S. But, even when borrowing is attested, the Portuguese form on occasions has kept the original semantic idiosyncrasies of the creole word, e.g., A *mema*/S *tlashi* 'back' (see below).

The creole corpus is summarized in Table 1 along with the Portuguese equivalents when applicable.

Table 1: Body Part Nouns*

| | ANGOLAR | SAOTOMENSE | PORTUGUESE |
|---|---|---|---|
| BACK | mema | tlashi | costas |
| EYES | we | we | olhos |
| BODY | onge | ubw | corpo |

[*Etymologies in Ferraz (1979) and Maurer (1992) were checked in Bentley (1895), Laman (1936), Melzian (1937), Maia (1955, 1964), Craven & Barfield (1971), Swartenbroeckx (1973).]

The following etymological considerations can be appended to the data in Table 1:

- With the exception of *tlashi* (< Ptg. *atrás*) and possibly *onge*, the remaining nouns have an African etymon, e.g. Kikongo *mima*, Bini *egbe* (S *ubwe*) and Gbari *we*.
- Reanalysis of word boundaries could account for A *onge*, i.e. Ptg. *o* 'the (masc; sg.) + *nge* 'person'; in turn, *nge* underwent concurrently a natural semantic extension from 'person' (< Ptg. *ninguém*) to 'human body'. This phenomenon is encountered in other creoles with different European lexifiers, e.g. Haitian Creole *zié* 'eye' < French *les yeux* /lezyë/ (Holm 1988:97). The alternate route is to derive A *onge* from Bini *egbe* (Maurer 1992:167).
- As to A, S *we*, both Portuguese and African derivations have been proposed. In his description of Principense, a variety related to A and S, Günther

(1973:245) suggests the dialectal Portuguese form *óy(u)*. This word, via fusion with the Portuguese article *o*, in a restructuring fashion similar to the process described above for *onge*, led to Principense *uwé*. Maurer (1992:166, footnote) lists A *we* as a Portuguese derived word, though he is not so adamant about this etymology.

## 4.0 Discussion

This section will take up the question of categorial changes in the body part words of A and S. For this purpose, the three terms (eyes, back, body) will be analyzed separately in order to demonstrate the extent to which each one fits the framework delineated in Heine et al. (1991a,b). Basically, one wants to investigate the linguistic changes (semantic, syntactic) that body part nouns go through upon metaphorical changes of the sort drawn in section 2.0. What follows is a set of questions that will guide the discussion below:

(1) What types of metaphorical changes attract the basic and concrete body part vocabulary of A and S ?
(2) What are the semantic and syntactic properties effected on the four-word list by those metaphorical changes ?
(3) Do all categories situated along the grammaticalization chain, i.e. SPACE, TIME, QUALITY, etc., exert similar influence on the basic words ?
(4) If not, what other linguistic forms and structures creole speakers resort to in filling in semantic categories unaffected by body part words ?

## 4.1 Back: A *mema*, S *tlashi*

The nominal character of the lexeme having a concrete anatomical significance (OBJECT category) is show in (8). It functions as an NP head which allows several modifiers (adjectives, possessives, NPs, etc.) in postposition.

(8a) A: E ka po te tubotunha mema re
3SG ASP can have big fish behind of-3SG
'He could have had a big fish behind him [his boat.]'

(8b) S: Ola n kole mosu da m ua soko ni tlashi
when 1SG run kid give 1SG a blow LOC back
'As I ran away the kid hit me on the back.'

The metaphorical transfer from OBJECT to SPACE category can be seen in (9). In this function, A *mema* and S *tlashi* are neither part of prepositional phrases nor of predicatives and, stand alone without any modifiers.

(9a) A: N ka pe ua taba we, n ka pe ua mema.
1SG ASP put one plank front 1SG ASP put one behind
'I put one plank up, I put another one behind.'

(9b) S: tlashi mo (Valkhoff 1966:259)
back hand
'wrist'

[cf. Principense: tashi umo~ (id.) and (14b) below]

(10) is susceptible to both the concrete and spatial interpretation, i.e., 'place behind/behind' (SPACE/OBJECT overlapping). That is, it is a case for the continuum cognitive chain having intermediate semantic categories.

(10a) A: Bo na ta kwa θa mema o wa
2SG NEG know thing be back 2SG NEG
'You don't what's behind you/on your back

(10b) S: So n volo mosu me de xe me
then 1SG insult kid mother 3SG come mother
de kole tlashi m
3SG run behind 1SG
'Then, I insulted the kid, his mother came out [of the house] and ran behind me/on my back.'

A further metaphorical extension of A *mema* and S *tlashi* represents the change 'back' > 'behind' > 'backward', the latter indicating a reversal of a condition or situation (see 11). Here the adverb usually functions with verbs of process and motion, thus bringing it under the category of PROCESS/ACTIVITY. As to its relative status in the cognitive hierarchy, that is, should it be a SPACE-to-PROCESS or vice versa, it is unclear at this point, although Heine et al. (1991b:49) offer examples from Ewe that would support the derivation of spatial concepts from activity concepts.

(11) S: N ka bila tlashi.
1SG ASP turn backward
'I'm going backward.'
[I'm becoming more sick.]

Neither A *mema* nor S *tlashi* has a temporal meaning. Instead, the two creoles recur to time adverbs such as A *ma∂o* 'before' (e.g. *ma∂o pomonha* 'before yesterday') and *Èo* 'after, then'; in S, one finds Portuguese *ante* and *so*, respectively.

### 4.2 Eyes: A, S *we*

As A and S 'back', the source concept *we* shows considerable semantic variation. First, the body part noun displays all the standard features of other creole nouns, e.g. modifiers in postposition (OBJECT).

(12a) A: E ka pia m k' we bluku
3SG ASP look 1SG with eyes angry
'She looks at me with angry eyes.'

[cf. S *we bluku* `vento do feiticeiro' (sorcery) (Sobral Gonçalves 1973:64) and Principense *te uwe* 'to be jealous' (Günther 1973:245)]

(12b) S: we be kloso deseja (Coelho 1880-86:114)
eyes see heart wish
'The eyes saw but the heart desired.'

With the pure spatial meaning 'in front of' (SPACE), *we* takes an adverbial function; in this function, the word does not require a preposition (*ni*, *pe*) and follows categorically the verb phrase. This is shown in (13) (see also 9a).

(13) A: Kompa ka lema we n ka lema mema
friend ASP row front 1SG ASP row back
'You will row in the front and, I in the back.'

The intermediate OBJECT/SPACE category 'front place' is attested in nominal complexes [*we* + NOUN] and prepositional phrases with *ni*.

(14a) A: we-mpuna 'front knee, i.e., kneecap'
A: we-vindji 'front lower leg, i.e., tibia'
A: we-poto 'front yard'

(14b) S: Dosu nge plase kala Su ua bi ni we
two person appear face Mr. one come LOC front
ua bi ni tlashi: Su ka po defendi ine one
come LOC behind Mr. ASP can defend PL

nge se?
person DEM

'(Let's say) two person appeared right in front of you, one came from the front, one from behind, could you still protect yourself from their attack?'

As part of verb constructions with *bila* 'to become, to turn' the noun *we* denotes motion forward or around (PROCESS/ACTIVITY) (15). Furthermore, in personal narratives of past events (e.g. childhood) A speakers make use of *biri we* 'to grow up' (literally 'to open the eyes'); a secondary meaning of *biri we* is 'to understand' (16). In S, one finds *flima* 'to grow up'.

(15a) A: Ola n ka bila we n kota ua mengai nase
when 1SG ASP turn eyes 1SG find a woman give birth
'When I turned around I saw a woman giving birth.'

(15b) A: Kanua bila we bere
canoe turn front INT
'The canoe moved really forward.'

(16) A: Ola ma no biri we no na kota tia
when that 1PL open eyes 1PL NEG find country

mor'e wa
manner-DEM NEG

'When we grew up, we didn't find the country in this way [life was better when we were young].'

Finally, a metaphorical extension of *we* into the QUALITY category indicates 'cunning, disrespectful' in the phrase *we riba* (lit. eyes above/on top). No TIME metaphor has been attested for *we* (see 4.1).

### 4.3 Body: A *onge*, S *ubwe*

The main categorial change for A *onge* and S *ubwe* is found in their reflexive use in constructions with the general form: $[(\textit{ki})_A/(\textit{ku})_S + (\textit{onge})_A/(\textit{ubwe})_S + \text{PRONOUN}]$, e.g. 'with body his' (himself). The reflexivization of body parts, including the word 'body' itself, has been attested in many African languages (Heine et al. 1991b:34) and creole languages (Holm 1988:204).

(17a) A: No mata ki onge no.
1PL kill with body 1PL
'We killed ourselves [sacrificed].'

(17b) S: E luta ku ubwe de
3SG fight with body of-3SG
'He sacrificed himself [worked hard].'

(17c) S: E ská flá ku ubué d'ê
3SG ASP speak with body of-3SG
'He is speaking to himself.'
(Schuchardt 1882:895)

The more concrete meaning is shown in (18).

(18) A: Kompa θe ka vugu ki loro onge.
friend be ASP struggle with pain body
'My friend is struggling with body pain.'

Unlike the other body part lexemes, the word for 'body' does not apply to the SPACE, PROCESS or QUALITY metaphorical category.

## 5.0 Grammaticalization and Creolization

The question of what role grammaticalization might have played during the formation of creole languages is a complex one. On one hand, the synchronic problems which the creolist has to face regarding the linguistic analysis and description of creole languages are not, in principle, unlike those found with other languages. On the other hand, diachronic investigation of creole grammaticalization cannot ignore the interlingual situation which shaped the formation and development of creoles.

Variation and diachronic change due to grammaticalization are to be explained in terms of the different language inputs and processes (linguistic, cognitive). For example, A and S show a number of grammaticalized body part lexemes originated from African languages. Since human body-related words show a lower substitution rate than other less basic words, they were likely to find their way into the creole lexicon during the early stages of creolization when slaves still spoke African language. Along with the concrete meaning of words, other semantic variants of African source concepts could have been borrowed as the result of the lexical and grammatical expansion of the creoles.

In addition, a cognitive development toward greater abstraction during creolization made use of both Portuguese and African languages, as shown earlier in the metaphorical transfer of words like A *-mema* and S *tlashi*. This is not restricted to just body parts; note the categorial change from the Ptg. noun *hora* 'hour' to the temporal connective A, S *ola* 'when'.

Furthermore, the extension of metaphorical transfer present in many African languages, but absent in Portuguese, can be argued to be evidence for substrate influence in A and S. However, research of a broader scope than it was intended here will be needed to ascertain the contributions of African languages as well as Portuguese to grammaticalization and, to frame these results within the conceptual underpinnings of creolization.

## 6.0 Conclusion

The lexicon associated with the human body in the two Portuguese-based creoles underwent some of the semantic and syntactic changes intrinsic to grammaticalization. More punctually, the research program put forth by Heine et al. (in particular, 1991b) furnished the conceptual background for the analysis of creole data. Metaphorical changes were seen to follow a cognitive trend towards greater abstract concepts, linguistically realized along a grammaticalization chain. Though much more limited in scope than Heine's et al. studies, this paper offers some preliminary results that evince the status of grammaticalization in Angolar and Sãotomense. The validity and generality of the conclusions reached on grammaticalization in Angolar and Sãotomense should be tested against other lexical domains.

* I would like to thank Philippe Maurer and Jean-Louis Rougé for sharing with me their expertise on the Gulf of Guinea creoles. Fieldwork was made possible in part by a fellowship from the Social Science Research Council.

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## SYMBOLS

δ = voiced interdental fricative
θ = voiceless interdental fricative
ASP = tense-mood-aspect marker
DEM = demonstrative
INT = intensifier
LOC = locative preposition
NEG = negation
PL = plural
SG = singular

# GREENBERGIAN METHODOLOGY APPLIED TO SOME EUROPEAN LANGUAGES

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In 1915, Edward Sapir published an article titled 'The Na-Dene languages: a preliminary report', in which he presented lexical, phonological, and morphological evidence that Athabaskan, Haida, and Tlingit are genetically related. The title of Sapir's article indicates that he did not believe it contained enough evidence to prove the relationship beyond all question. Nevertheless, he states that 'enough is here given to remove this thesis beyond the realm of the merely probable' (1915:534). A fuller presentation of the data, which Sapir stated was in preparation, was never published.

Levine (1979) is a response to Sapir's article in which the author, after addressing all the varieties of evidence presented by Sapir, concludes that 'there is currently no empirical basis for including Haida in the Na-Dene grouping' (1979:157). According to Greenberg (1987:321), this conclusion has been generally accepted among specialists in the field.

Chapter 6 of Greenberg (1987) is devoted to discrediting Levine's conclusion. This effort, moreover, attends to lexical evidence only, since Greenberg believes that Sapir's original lexical evidence is sufficient to demonstrate a three-way relationship between Athabaskan, Haida, and Tlingit. To prove his case, he compares Sapir's list of three-way cognates to a comprehensive listing, based on Walde and Pokorny's 1927 Indogermanisches Wörterbuch, of three-way cognates among Albanian, Armenian, and Celtic. The two lists are reproduced in Tables 1 and 2, the first from Sapir's article (1915:551-554), the second from Greenberg's book (1987:328-329). The item numbers in the Sapir list correspond to those of his article, in which 98 two- or three-way lexical correspondences were presented, of which Greenberg discusses only the thirty three-way sets. Greenberg's list uses Old Armenian, and Old Irish for the Celtic words unless otherwise noted. Where otherwise noted, B stands for Breton, G for Gaulish, MI for Middle Irish, and W for Welsh.

Walde and Pokorny's 1927 work has been supplanted by Pokorny's 1959 edition, and since that work appeared a good deal more work has been done in Indo-European linguistics, so that a modern list of Albanian-Armenian-Celtic cognates might include several more entries than Greenberg's. On the other hand, much work has been done in all of the supposed Na-Dene languages as well, so that perhaps a larger list than Sapir's could be constructed as well. Furthermore, increased understanding could cause us to remove items from a list as well as add them; e.g., Alb. *dhi* 'she-goat' is probably not cognate with Arm. *ezn* 'ox', OI *ag* 'cow' (Huld 1984:59).

| Athabaskan | Haida | Tlingit |
|---|---|---|
| 1. a- demonstrative stem | a- | a- |
| 4. -ca, -cal ‘to catch with a hook’ | djd ‘bait’ | cat ‘to seize’ |
| 5. -d, -dė ‘at, to’ | -da ‘to’ | -t, -dɛ ‘to’ |
| 10. -del ‘several go’ | dal ‘several go by land’ | at ‘several go’ |
| 11. deł ‘crane’ | di•lα | du•ɫ |
| 12. di ‘this’ | dei ‘just that way’ | de ‘now’ |
| 18. -γa ‘for’, -γan ‘to’ | g̣a ‘to’, g̣αn ‘for’ | g̣a ‘for’ |
| 19. -γa ‘to go’ | -g̣a ‘to go in order to’ | -γa ‘to go to’ |
| 22. -γel ‘to be dark, night passes’ | g̣ȧ•l ‘night’ | g̣et ‘to get dark’ |
| 25. hai ‘that’ | hao ‘that’ | he ‘this’ |
| 31. -k‘e personal noun plural | -x̣a distributive suffix | -nα-x̣ distributive numeral suffix |
| 33. k!a ‘arrow’ | q!a• ‘harpoon’ | q!a ‘point’ |
| 40. ɫa ‘one’ | tla•- ‘the first’ | tle•- ‘one’ |
| 45. mĕ- ‘he, it’ | wa- ‘that’ | we ‘that’ |
| 48. -n, -η local postposition | -n, -η general postposition | -n ‘with’, also local postposition |
| 51. -ne, -n ‘person, people’ | na ‘to live; house’ | na ‘people’ |
| 59. sil ‘steam’<br>-sil ‘to steam’ | sil ‘to steam’ | si•ɫ ‘to cook’ |
| 60. -t‘a ‘among’ | t‘a-oan ‘alongside of’ | -t‘a•-k$^u$ ‘in the middle of’ |
| 62. -t‘an ‘to eat’ | t‘a ‘to eat’ | t‘a•q! ‘to chew’ |
| 64. -t‘e ‘to be cold’<br>t‘ĕn ‘ice’ | t‘at ‘cold’ | t‘a•dj ‘cold’ |
| 65. -t‘e ‘to lie’ | t‘ai, t‘i ‘to lie’ | t‘ai ‘to lie’<br>t‘a ‘to sleep’ |

| | | | |
|---|---|---|---|
| 68. | t!a `feather’<br>-t!a `to fly’ | t!agun `feather’<br>t!aō- `feather-like object’ | t!a-wu `feather’ |
| 69. | -t!a `tail’<br>t!a-η `backwards’ | -t!ał `back of’ | -t!a `behind’ |
| 74. | ts!ai `dish’ | sq!ao `to put in a dish’ | s!ıq! `dish’ |
| 78. | -tc`oη `mother-in-law’ | djo’n | tc`a’n |
| 82. | x̣a- `up, out of’ | k`wa-gi `above’ | k`e `upward’ |
| 89. | ẏe- `that’<br>y- `he’ | gai `this, that, the’ | ya `this’ |
| 93. | -ye `in’ | -g̣ei `into’ | -g̣e’ `inside of’<br>-γı-k `inside’ |
| 95. | yo `that yonder’ | gu `there’ | yu `that yonder’ |
| 98. | -’in `to see, to look’ | q`ın | g̣ɛn |

Table 1 (from Sapir 1915)

| | Albanian | Armenian | Celtic |
|---|---|---|---|
| 1. | ballë ‘forehead’<br>balash ‘horse with white spot on forehead’ | bal ‘white spot on a horse’s forehead’ | ball ‘spot’ |
| 2. | barrë ‘load’ | ber-em ‘carry’ | bir-u ‘carry’ |
| 3. | birë ‘hole’ | beran ‘mouth’ | bern ‘hole’ (MI) |
| 4. | dhi ‘goat’ | ezn ‘ox’ | ag ‘cow’ |
| 5. | dhjetë ‘ten’ | tasn ‘ten’ | deich ‘ten’ |
| 6. | djalë ‘child’ | dalar ‘green, fresh’ | dail ‘leaf’ (W) |
| 7. | dorë ‘hand’ | dzern ‘arm’ | gort ‘cornfield’;<br>gorz (B) ‘hedge, fence’ |
| 8. | dru ‘tree’ | tram ‘firm’ | derucc ‘acorn’ |
| 9. | du ‘two’ | erku ‘two’ | dau ‘two’ |
| 10. | ëmblë ‘sweet’<br>t-ëmblë ‘gall’ | hum ‘raw’ | om ‘raw’ |
| 11. | ëmër ‘name’<br>ëmën (Gheg) ‘name’ | anun ‘name’ | ain m- ‘name’ |
| 12. | gjanj ‘hunt, pursue’ | gan ‘blows, stick’ | gon-im ‘wound, kill’ |
| 13. | gjashtë ‘six’ | vets ‘six’ | sē ‘six’;<br>chwech (W) ‘six’ |
| 14. | gjerb ‘sip’ | arbi ‘drink’ | srub ‘snout’ (MI) |
| 15. | gjumë ‘sleep’ (n.) | k‘un ‘sleep’ (n.) | suan ‘sleep’ (n.) |
| 16. | halë ‘fishbone, pine needle, splinter, awn’ | č‘elk‘-em ‘split’ | scailim ‘release, destroy, dismantle’ (MI) |
| 17. | harr ‘weed out, prune’ | k‘or-em ‘scratch’ | scaraim ‘separate’ |
| 18. | im ‘my’;<br>mua ‘I’ | im ‘my’ | mē ‘me’ |
| 19. | lig ‘bad’ | ałkat ‘poor, few’ | līach ‘miserable, unfortunate’ |

| | | |
|---|---|---|
| 20. llërë `forearm’ | oɫn `forearm’ | elin `elbow’ (W) |
| 21. madh `good’ | mets `large’ | mag- `large’ |
| 22. mbi, mbë `near, on’ | amb- `about’ (in compounds) | ambi `around’ (G) |
| 23. mjal `honey’ | meɫr `honey’ | mil `honey’ |
| 24. motër `sister’ | mayr `mother’ | mathir `mother’ |
| 25. për `for, about, on, by, because of’ | heri `far’ | *eri `in front of, for’ (Proto-Celtic) |
| 26. plot `full’ | li `full’ | lia `more’ |
| 27. qeth `cut hair, sheath’ | k`ert`-em `take off, peel’ | scrissid `scraper, graving tool’ |
| 28. quanj `to name’; quh-em `be called’ | lu `informed’ | cloth `fame’ |
| 29. shatë `seven’ | evt`n `seven’ | secht n- `seven’ |
| 30. (kä)-ta `these’ | -d `the’ | (ua)-d `(from) it’ |
| 31. ti `thou’ | du `thou’ | tū `thou’ |
| 32. tre `three’ | ere-k `three’ | tri `three’ |
| 33. verrë `alder tree’ | geran `log, beam’ | gwern `alder, mast’ |
| 34. vjehërr `father-in-law’ | skesur `father-in-law’ | chweg `father-in-law’ (W) |
| 35. vjell `vomit’ | gel-um `turn’ | fill-im `bend’ |
| 36. zjarr `fire, heat’ | jer `warmth’ | grith `sun, heat’ (MI) |
| 37. zonjë `lady, wife’ | ken `woman’ | ben `woman’ |

Table 2 (from Greenberg 1987)

In any case, it is unlikely that we would find a significantly larger number of cognates for these three Indo-European branches than Sapir posited for his Na-Dene branches.

Levine rejects a number of Sapir's proposed cognate sets for a variety of reasons, including correspondence of only one out two or more consonants in a root and also consonant correspondences attested in only one cognate set. A residue of 17 non-rejected three-way sets remains; for Greenberg, this is a significant number. Applying the two above criteria for elimination of sets to his Indo-European list, Greenberg finds that only six sets survive (1, 2, 3, 18, 22, and 23).

Greenberg's conclusion from the data thus far presented is a curious one, and I quote him at length here to avoid misrepresentation (1987:327).

> In this chapter, only lexical evidence has been discussed, since I believe this to be sufficient. If there were only three branches of Indo-European, and these were known only in their modern forms (Old Armenian and Old Irish have been used here), some linguists might speak of an Indo-European problem as they do a Na-Dene problem. In spite of all the talk of 'phylum linguistics', the two main branches of Na-Dene [Haida vs. the rest, TJP] are no more distant from each other than the branches of Indo-European are from one another.

The argument here seems to be that since Albanian, Armenian, and Celtic, which we know through a variety of evidence to be related at a time depth of perhaps five or six thousand years, have a certain amount of cognate vocabulary, then any three languages or language groups having a similar amount of apparently cognate vocabulary must be related at about the same time depth. Greenberg's argument is not that such evidence shows that the languages in question might be related, or that so small a number of cognates cannot be considered as disproof of relationship, since Levine never states that Haida is not related to the other languages in question. Levine properly leaves open the possibility that Haida might indeed be related to Athabaskan and Tlingit or indeed to some other languages. He states only that the evidence presented is insufficient to prove the Na-Dene affiliations of Haida (see the quote above, also 1979:170).

Returning to the quotation from Greenberg, I believe that we can fairly gloss 'the lexical evidence...[is] sufficient' as 'the lexical evidence is sufficient to prove the relationship'. This could only be true if all examples of putative three-way cognate lists were valid, that is, if such lists could not be constructed out of false cognates. The challenge, then, is to attempt to construct such a list. However, it is important to be certain that the cognates are truly spurious, lest the very evidence used against Greenberg's arguments be taken as proof of a valid genetic grouping, and hence not as evidence against Greenberg at all. Even a list using words from, for example, Norwegian, Dyirbal, and Mixtec could provide fodder for reconstructers of Proto-World, even if no one would seriously suggest a time depth for these three languages similar to that of Indo-European.

In any case, I do not know Norwegian, Dyirbal, or Mixtec and so would have trouble working with them. I do know English, Latin, and Classical Greek, and these languages have the advantage of having been intensively studied by historical linguists for many years. Thus, it is fairly easy to demonstrate that items that look at first glance like cognates, such as Gk. *theos* and Lat. *deus*, are in fact unrelated, at least at the Indo-European level. The disadvantage, of course, is that many actually cognate words, such as most numerals and words of family relationship, are unavailable for the production of spurious sets. Nevertheless, the list of false cognates in Table 3 includes 38 items, more than either Sapir's or Greenberg's list. Moreover, if we apply the two criteria of elimination which Greenberg applied to the Albanian-Armenian-Celtic cognates, a total of 11 sets remain (5, 6, 9, 11, 12, 26, 29, 30, 31, 35, and 36), fewer than Levine left in Sapir's list but more than Greenberg's paring left for Albano-Armeno-Celtic.

Before continuing I should comment on my English, Greek, and Latin list. First of all, a caveat is in order, since with ever increasing understanding of Indo-European, it may be suggested in the future that one or two of the correspondences below are valid, at least across two languages. However, even if one or two cases are in fact not spurious, the overwhelming majority are.

Second, none of the similarities in these words are due to borrowing. For example, although Eng. *deviate* is a borrowing from Latin, the Latin source is not *duo* but *de-* 'away from' plus *via* 'road'. On the other hand, given the geographical proximity of Haida, Tlingit, and Athabaskan, borrowings are extremely likely, and Levine in fact cites several probable cases of borrowing in Sapir's list (1979:163).

Third, I have restricted myself to individual languages rather than including one widely ramified sub-family such as Celtic or Athabaskan. However, given the richness of English vocabulary, this was probably not much of a handicap.

Lastly, the list excludes not just three-way correspondences, but two-way ones as well. This is significant in that the connection between Tlingit and Athabaskan is now generally accepted, so that some of the Athabaskan-Tlingit cognates proposed by Sapir may be valid. A list which included valid cognates for two of the three languages English, Latin, and Greek could doubtless be more impressive than that presented in Table 3. A few examples of cognate sets valid for English and Latin but not for Greek are Eng. *one*, Lat. *unus*, Gk. *he*[illegible]; *two*, *duo*, *deuteros* 'second'; *ear*, *auris* 'ear' *auscultō* 'listen', *akouō* 'hear'. However, when Sapir wrote his article, he was concerned not just to prove that Haida belonged with Athabaskan, but Tlingit as well, and Greenberg's conclusion is that Sapir's three-way lexical correspondences are sufficient to prove both points. It is therefore appropriate that the list of

| English | Latin | Greek |
|---|---|---|
| 1. brain | frōns 'forehead' | phrēn 'mind' |
| 2. burn | combūrō | pūr 'fire' |
| 3. bull | vitulus 'calf' | boidion 'small bull/cow' |
| 4. cake | coquō 'cook' | kokkos 'seed' |
| 5. call | calō | kērussō 'proclaim' |
| 6. clam | clam 'secretly' | kruptō 'hide' |
| 7. cloth | crātis 'a woven wicker frame' | klōthō 'spin' |
| 8. club | clāva | kolaptō 'strike' |
| 9. comrade | comes | gamos 'wedding' |
| 10. creep | clepō 'steal' | herpō |
| 11. cut | caedō 'cut, kill' | koptō 'strike, cut off' |
| 12. day | diēs 'day'<br>deus 'god' | theos 'god' |
| 13. decade | digitus 'finger' | daktulos 'finger' |
| 14. deviate | duo 'two' | deuteros 'second' |
| 15. fall | fallō 'deceive, fail' | apollūmi 'perish' |
| 16. fear (n.) | pavor | phobos |
| 17. fear (v.) | vereor | orgeō 'be angry' |
| 18. fowl | pullus 'chicken' | phlexis 'an unknown bird' |
| 19. glad | gratiās 'grace, thanks' | kharit- 'grace, thanks, kindness' |
| 20. go | agō 'set in motion' | erkhomai 'come, go' |
| 21. goat | equit- 'horseman' | aigid- 'goatskin' |
| 22. haul | hauriō 'draw up, draw out' | haireō/helo 'take, grasp'<br>helkō 'drag' |
| 23. have | habeō | haptō 'grasp' |
| 24. he | hic 'this one, he' | ho 'that one, he' |
| 25. herald | erus 'master' | hērōs 'hero' |
| 26. keen (v.) | canō 'sing' | koinoō 'communicate' |

| | | |
|---|---|---|
| 27. king | consul `chief magistrate' | arkhōn `ruler, chief magistrate' |
| 28. look | lūx `light' | phlox `flame' |
| 29. man | hūmānus | manos `alone, single' |
| 30. mood | modus `way' | methodos `method' |
| 31. orc | Orcus `the underworld' | orgia `secret rites' |
| 32. pair | bi- `two' | amphi- `on both sides' |
| 33. pike | piscis `fish' | apikhthus `eating no fish; paltry little fish' |
| 34. son | satus `offspring' | sungenēs `relative' |
| 35. star | sīder- | Astartē `the planet Venus' |
| 36. talk | dīcō `say' | trig- `shriek (of animals)' |
| 37. time | tempus | thama `often'<br>thēmerai `on that day' |
| 38. whelp | vulpēs `fox' | alēptos `hard to catch' |

Table 3

Note: For ease of reading, English and Latin are in traditional orthography and Greek in a standard transcription, but comparisons are based on sound, not spelling. I have of course ignored the frequent nominative singular ending /s/ of Latin and Greek in comparisons.

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spurious cognates be spurious across all three languages.

I return again to the quotation from Greenberg cited above. 'If there were only three branches of Indo-European...some linguists might speak of an Indo-European problem as they do a Na-Dene problem'. Of course we would, and rightly. Certainly, if we restricted ourselves to the lexical evidence summarized by Greenberg, we would have little basis for stating that Albanian, Armenian, and Celtic form a valid genetic grouping. The example of English, Latin, and Greek shows that a simple list of thirty to forty putative cognates can quite as easily be due to chance resemblance as to genetic inheritance. In the Na-Dene case, moreover, there is borrowing to be taken into account, not just simple borrowing of lexical items, but more subtle sorts of areal influence such as semantic loan shifting. The geographical situation greatly restricts the possibility of such influence among Old Irish, Albanian, and Armenian, while it was artificially restricted in the English, Latin, and Greek example.

I am not stating that Haida is genetically unrelated to the Na-Dene languages. It may well be related to them, and the relationship may even be, as Greenberg states, no more distant than that separating the branches of Indo-European. The point is that looking at word lists alone is not the proper way of determining genetic relationships. Sapir, to be certain, did not so restrict himself; over half of his article is devoted to a comparison of morphological systems, and Krauss (1965:18) regards this section as 'certainly the strongest point in Sapir's argument for the unity of Na-Dene'. Nor does Levine, in criticizing Sapir's thesis, deal only with the lexicon. It is Greenberg who states that the lexical evidence is sufficient and so states the unimportance of all the other information available for judging the validity of the Na-Dene hypothesis.

We know that Albanian, Armenian, and Celtic are related not because of the construction of comparative word lists, but because of decades of painstaking, detailed analysis of these languages, their histories, and their speakers' cultures and histories, as well as similar analysis of neighboring languages and cultures. For many years, Armenian was mistakenly regarded as an Iranian language, largely because of obvious but misleading lexical similarities between them. On the other hand, too great an emphasis on morphology delayed the recognition that Albanian was an Indo-European language. In these cases, as in general, what clarified the situation was careful investigation of numerous aspects of the pertinent languages and cultures.

We know that my putative English, Latin, and Greek cognates are spurious because the careful work done on Indo-European allows us to know it. We know that Albanian, Armenian, and Celtic are related because of that same careful work, not because of a word list showing thirty-seven possible cognates. For Haida and Na-Dene, the jury is still out. The languages involved have not been as thoroughly studied for as long a time as the Indo-European languages, nor do they have a long written tradition, both facts which make it harder to judge for certain what manner of relationship holds among them. At the same time, it is harder to be confident in our acceptance and rejection of possible cognates when the historical relationships and developments of the languages are not as clear as those of Indo-European. Sapir's cognate sets could be largely or wholly valid or invalid, as might the classification of Haida with Na-Dene. Possibly future work will clarify the situation, but with present evidence, of which lexical evidence is only a part, we simply do not know.

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